

University of Montana

ScholarWorks at University of Montana

Graduate Student Theses, Dissertations, &
Professional Papers

Graduate School

1973

Prehistory of the Bitterroot Valley

Linda C. Ward

The University of Montana

Follow this and additional works at: <https://scholarworks.umt.edu/etd>

Let us know how access to this document benefits you.

Recommended Citation

Ward, Linda C., "Prehistory of the Bitterroot Valley" (1973). *Graduate Student Theses, Dissertations, & Professional Papers*. 3285.

<https://scholarworks.umt.edu/etd/3285>

This Thesis is brought to you for free and open access by the Graduate School at ScholarWorks at University of Montana. It has been accepted for inclusion in Graduate Student Theses, Dissertations, & Professional Papers by an authorized administrator of ScholarWorks at University of Montana. For more information, please contact scholarworks@mso.umt.edu.

PREHISTORY OF THE BITTERROOT VALLEY

By

Linda C. Ward

B.A. University of Montana 1969

Presented in partial fulfillment of the requirements

for the degree of

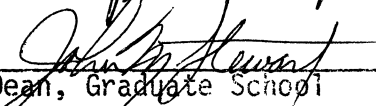
Master of Arts

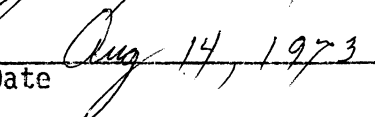
UNIVERSITY OF MONTANA

1973

Approved by:


Chairman, Board of Examiners


Dean, Graduate School


Date Aug 14, 1973

UMI Number: EP36276

All rights reserved

INFORMATION TO ALL USERS

The quality of this reproduction is dependent upon the quality of the copy submitted.

In the unlikely event that the author did not send a complete manuscript and there are missing pages, these will be noted. Also, if material had to be removed, a note will indicate the deletion.



UMI EP36276

Published by ProQuest LLC (2012). Copyright in the Dissertation held by the Author.

Microform Edition © ProQuest LLC.

All rights reserved. This work is protected against
unauthorized copying under Title 17, United States Code



ProQuest LLC.
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106 - 1346

8-14-73

ACKNOWLEDGEMENTS

Doctors Carling Malouf, Dee Taylor, Frank Bessac, and Leroy Anderson all deserve a special thank you for helping me meet and beat the deadlines. Dr. Malouf also gave me much personal information which he gathered from informants in the past, for which I am grateful.

Ray Abbott, of the Sula District Ranger Station and his family took me in and introduced me to the people of the East Fork of the Bitterroot. Ray also gave me leads on many sites.

Other residents of the valley, too numerous to mention, were kind enough to let me photograph their collections and tromp around their land.

Friends gave me places to stay, both while doing the initial field work and while finishing the writing, and I thank them.

Final thanks go to my husband, Burt Williams, for giving me the encouragement to continue and finish the project.

*We miss you, Linda... It's been 12 years - you still
inspire me everyday.*

Rye

TABLE OF CONTENTS

		PAGE
	Acknowledgments	ii
	Table of Contents	iii
	List of Figures	vii
CHAPTER		
I.	INTRODUCTION	1
	Theory	3
II.	PHYSIOGRAPHY	6
	Climate	10
	Flora	10
	Fauna	12
III.	ETHNOGRAPHIC AND ARCHAEOLOGICAL DESCRIPTION OF AREAS ADJACENT TO THE BITTERROOT VALLEY. .	14
	The Columbia Plateau.	14
	The Great Basin	16
	The Northwestern Plains	18
	The Western Montana Region	20
IV.	ARCHAEOLOGICAL SITES IN THE BITTERROOT VALLEY AND ADJACENT AREAS	23
	24RA501 Spring Gulch Site	23

CHAPTER

PAGE

24RA502 Allen Pictographs	26
24RA503 Medicine Tree Pictographs	30
24RA504 Hays Pictographs	30
24RA505 Indian Sphinx Pictographs	33
24RA506 Blue-eyed Child Site	37
24RA507	45
24RA508 Willow Creek Site	46
24RA509 Davenport Site	48
24RA510 Marshall Burial	48
24RA511 Indian Trees Campground	52
24RA512 Root Cellar Site	54
24RA513 Medicine Tree	54
24RA514 Sula Peak Pass	57
24RA515 Rattlesnake Flat Site	58
24RA516 Hotshot Site	60
24RA517 Sweathouse Site	60
24RA518 Stirwalt Shelter Pictographs. . .	63
24M01082 Waldbillig Site	63
V. ROCK ART	67
Anthropomorphic Figures	68
Shield Bearing Warriors	68
Solidly Colored Figures	69
Female Figures	69

CHAPTER	PAGE
Animals	69
Canine	69
Elk or Deer	70
Snakes	70
Bison	70
Amorphic Animals	71
Inanimate Subjects of Rock Art	71
Counter Lines	71
Interpretations	72
VI. ARTIFACT ANALYSIS	76
Chipped Stone	76
Projectile Points	76
Knives	80
Scrapers	84
Awls	87
Ground Stone	87
Pestles	89
Edge-Ground Cobbles	90
Mauls	90
Celts	92
Pipes	93

CHAPTER	PAGE
Bone	94
Worked Bone	94
Faunal Remains	98
Shell	101
Discussion	101
VII. SUMMARY	104
Interpretations	104
Conclusions	114
LITERATURE CITED	

LIST OF FIGURES

FIGURE	PAGE
1. Map of Montana and Bitterroot Valley	2
2. Map of Bitterroot Valley showing Passes and Sites	7
3. 24RA501 Pictographs	24
4. 24RA501 Pictographs	24
5. 24RA501 Pictographs	25
6. 24RA502 Pictographs	27
7. 24RA503 Pictographs	28
8. View of East Fork of Bitterroot from 24RA503 . . .	29
9. 24RA504 Pictographs	31
10. 24RA504 Pictographs	32
11. 24RA505 Photograph of Site	34
12. 24RA505 Pictographs	35
13. 24RA505 Pictographs	36
14. Map of 24RA506	38
15. Photograph of Rock Shelter at 24RA506	40
16. Side Profile of Rock Shelter at 24RA506	40
17. Photograph of entire site at 24RA506	41
18. Test--Soil Profile at 24RA506	42

FIGURE	PAGE
19. 24RA506 Pictographs--Full Panel	43
20. 24RA506 Pictographs--Horned Figures	44
21. Artifacts Observed at 24RA509	47
22. Map of 24RA510	49
23. 24RA510 Test Profile	51
24. 24RA510 Planview	51
25. Scarred Tree at 24RA511	53
26. Medicine Tree--24RA513	55
27. 24RA515--Two Artifacts from Site	59
28. 24RA516--Photograph of Hotshot Site	59
29. 24RA517 Site Photo	61
30. 24RA517 Site Photo	61
31. 24RA518 Stirwalt Pictographs	62
32. Map of 24M01082	64
33. Projectile Points	79
34. Knives	83
35. Graver, Scrapers	85
36. Flint Awls	86
37. Conical Pestle	88
38. Pestle from Miller Creek	88
39. Celt from 24RA510	91
40a. Scapula Awl	95

FIGURE	PAGE
40b. Long Bone Object	95
40c. Incised, Double Pointed Bone Object	95
40d. Rodent Tooth	95
40e. Sesmoidal Beads	95
40f. Bird Bone Bead	95
41. Elk Scapula	99
42a. Human Femur	100
42b. Human Radius	100

CHAPTER I

INTRODUCTION

The Bitterroot Valley, the study area with which this paper is concerned, lies in the "nose" of western Montana (fig. 1). The Bitterroot River, the major stream in the valley, is formed at the confluence of the East and the West Forks of the Bitterroot, at the southern end of the valley. It flows northward until it joins the Clark Fork River at Missoula, Montana.

Although archaeological sites were known to be in the Bitterroot Valley, previous surveys were able to find few sites. Malouf, in 1951, with a field class in archaeology, explored the valley for sites. The class surveyed the east side of the valley from Lolo to Hamilton and then surveyed the western side back to Lolo, but they found few indications of prehistoric occupation. Valley residents from one end to the other have themselves, or have known others, who mostly in the past, collected stone tools from various surface sites. Because the valley was settled by whites quite early, ca. 1860's, former sites have been worked and cultivated so that little trace, if anything but hearsay, remained. Nevertheless, it was thought that the information recovered during the course of the

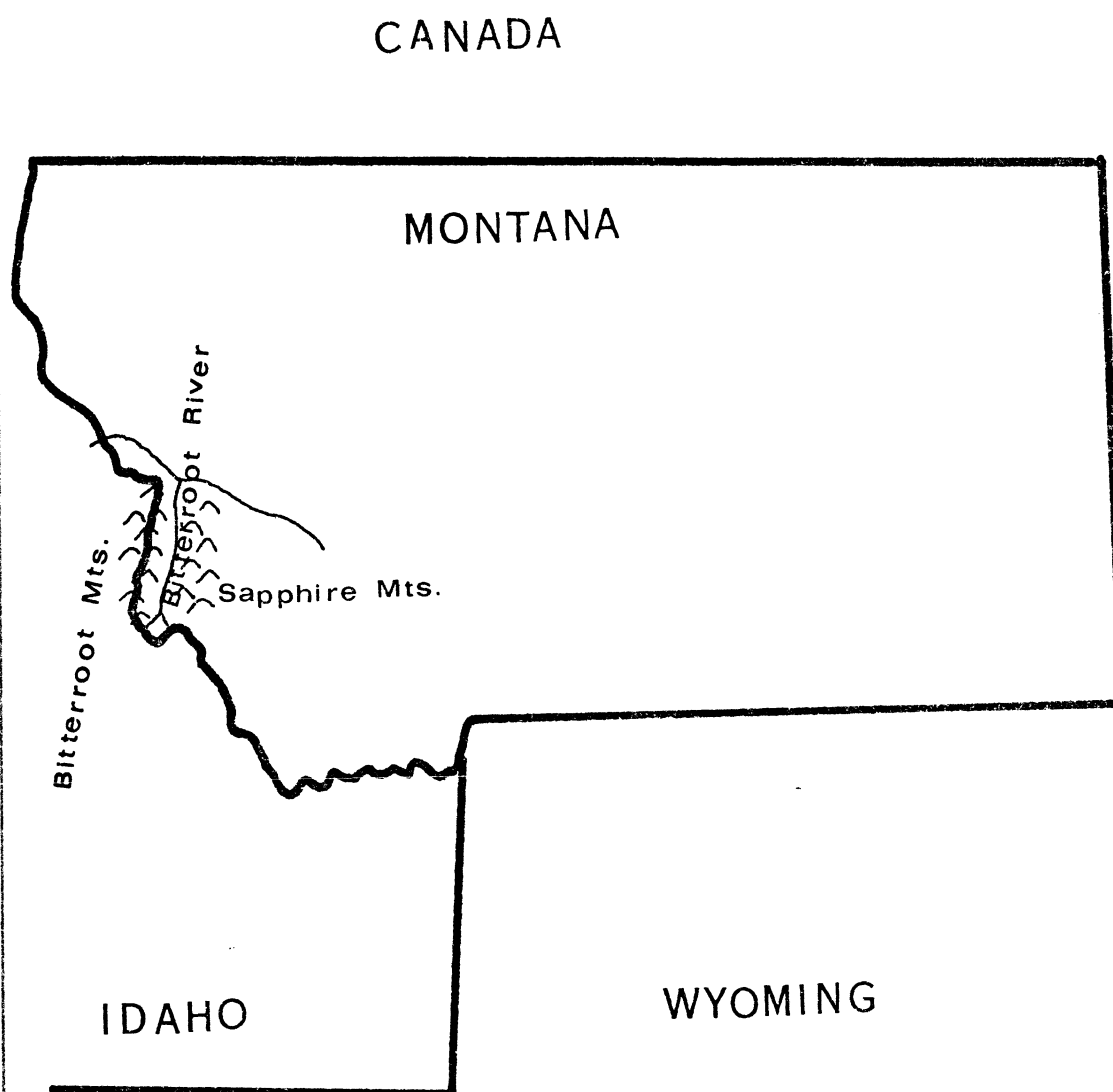


Fig. 1. Map of Montana and the Bitterroot Valley.

survey and elicited from collectors in the valley would contribute to a more complete record.

The geographical setting of the Bitterroot Valley was thought to be important. It lies between the Columbia Plateau, the Northwestern Plains, and it is also north of the Great Basin. The geographical position of the valley itself is unique. Mountains surround the valley on three sides, and its widest opening is at the northern end, where the Bitterroot River meets the Clark Fork.

Specifically, the purpose of this paper was threefold. It was hypothesized that the unique location of the Bitterroot Valley, near the aforementioned areas, would have been an ideal place for prehistoric occupation. Sites therefore with Great Plains, Plateau and Basin affinities would be found in the valley. Secondly, by using comparative data from each of the surrounding areas, it was thought that a culture-historical sequence for the Bitterroot Valley could be formulated. Lastly, the data would allow me to construct some explanations as to how and why people choose to live in the valley.

Theory

This paper was based on several aspects of archaeology. Information was given me by local residents of the valley as to where sites might be and who collected from them in the past. These leads were followed, and some of them lead to intact sites, but others led only to the geographic location itself, where no

cultural evidences remained. The second aspect was that of survey. Based upon informant information and non-random choice on my part--investigating areas likely to have archaeological material--mouths of tributary valleys, open flats, springs and a pass were surveyed. The third aspect of the research strategy was that of testing. Test pits were put into sites, which, either through hearsay or personal examination, were thought to contain subsurface cultural remains. Because the information on Western Montana is incomplete--Malouf's work at Flathead Lake (1956) provides the only sequential picture--it was not practical at this point to attempt to form general cultural conclusions about the area. The theoretical framework behind this study was based upon that of a culture history of the valley--a descriptive base with comparisons made to the traits found in surrounding areas.

Willey and Phillips (1958) saw three major levels of organization which apply to scientific analysis. The first level was that of fieldwork, or observation. The next level was descriptive, or "culture-historical intergration." It

"...covers almost everything the archaeologist does in the way of organizing his primary data: typology, taxonomy, formulation of archaeological 'units', investigations of their relationships in the contexts of function and natural environment, and determination of their internal dimentions and external relationships in space and time" (Willey and Phillips 1958:4).

It was with this level that the research was primarily concerned. The third level was that of explanation or processual interpretation. About this Willey and Phillips (1958) said

Whatever we choose to call it, the important consideration is that, on this explanatory level of organization where we are no longer asking merely what but also how and even why, our formulations must be viewed in both their cultural and social aspects.

Using the data collected in the Bitterroot and the comparative literature from surrounding areas, I wanted to determine if some explanations could be formulated.

CHAPTER II

PHYSIOGRAPHY

The Bitterroot Valley is an inter-montane basin (McMurtrey and Konizeski 1959:5) in the Northern Rocky Mountain physiographic province (Fenneman 1931). The valley drains northward for about 65 miles from approximately five miles south of Darby, Montana, where the confluence of the East and West Forks of the Bitterroot form the river's head, to the point where the Lolo Fork enters the Bitterroot River (Lindgren 1904:23) (fig. 2).

At the upper end of the valley, the East and West Forks flow through their respective valleys until they broaden and form one river, called the Bitterroot River. At about Lolo, the Bitterroot Valley widens and opens onto a flat where the present town of Missoula is situated. Here the Bitterroot River joins the Clark Fork River.

Asymmetrical in cross section, this segment of the Rocky Mountain Trench is bounded on the west by the steep walled Bitterroot Range and by the more gently sloping Sapphire Range on the east. The towering Bitterroot crestline, which rises over 6,000 feet above the valley floor, forms the Montana-Idaho border. The lowest point on this line is 6,589 feet above sea level, at Nez Perce

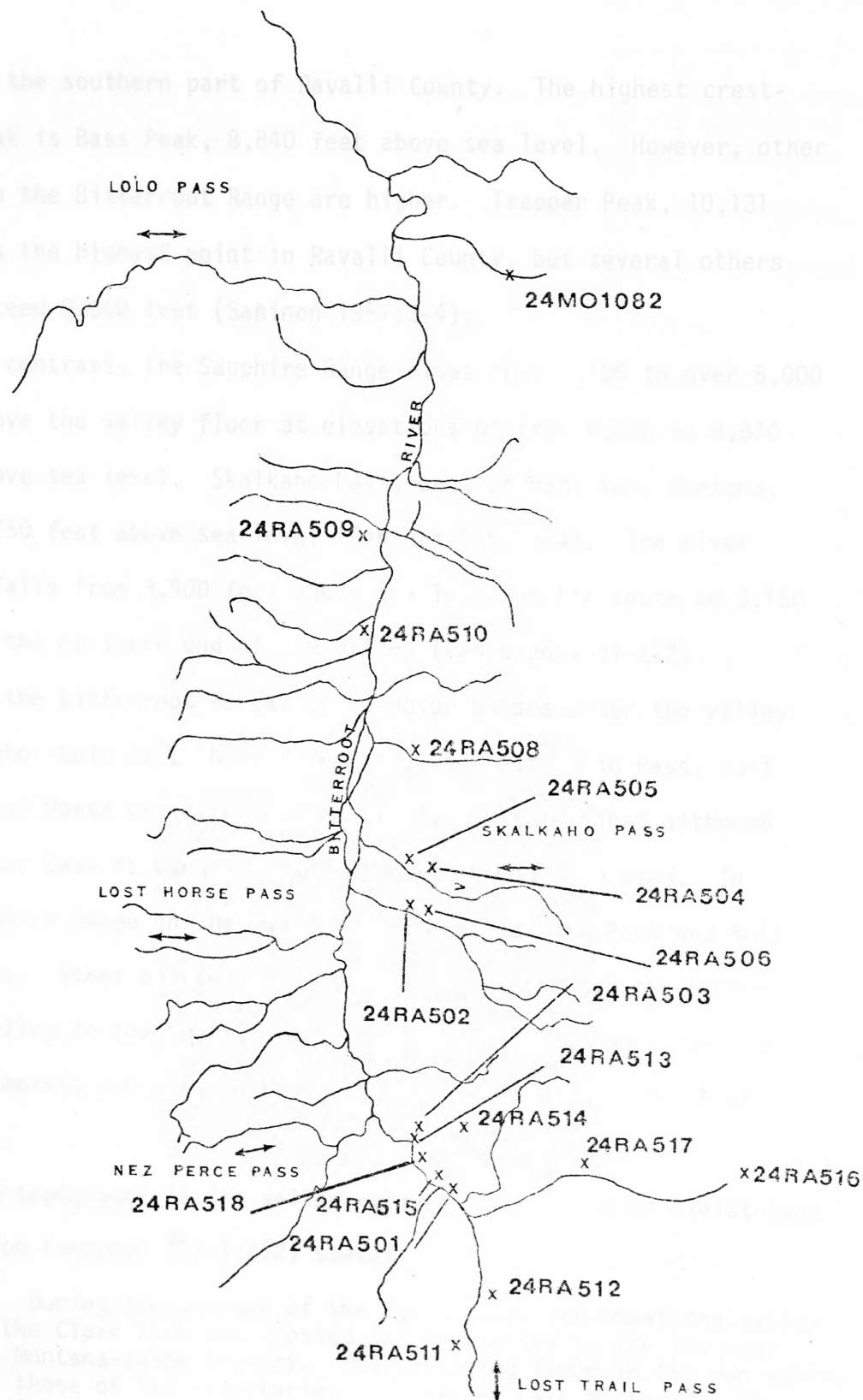


Fig. 2. Map of Bitterroot Valley with passes and sites.

Pass in the southern part of Ravalli County. The highest crest-line peak is Bass Peak, 8,840 feet above sea level. However, other peaks in the Bitterroot Range are higher. Trapper Peak, 10,131 feet, is the highest point in Ravalli County, but several others also exceed 9,000 feet (Sahinen 1957:3-4).

In contrast, the Sapphire Range rises from 2,700 to over 5,000 feet above the valley floor at elevations of from 6,000 to 8,870 feet above sea level. Skalkaho Pass, east of Hamilton, Montana, lies 7,250 feet above sea level (Sahinen 1957:3-4). The river itself falls from 3,900 feet above sea level at the south to 3,150 feet at the northern end of the valley (Fenneman 1931:222).

In the Bitterroot Range, three major passes enter the valley from Idaho--Lolo Pass, Nez Perce Pass, and Lost Horse Pass, just above Lost Horse Creek. Lindgren (1904:41) stated that although the latter pass is dangerous and narrow, it could be used. In the Sapphire Range on the eastern side are Skalkaho Pass and Sula Peak Pass. Other entrances to the valley are through the Salmon River valley to the south, over Lost Trail Pass, Gibbons Pass to the southeast, and the Clark's Fork River drainage to the north (fig. 2).

The topography of the valley reflects the extent of Pleistocene glaciation. Fenneman (1931:222) stated

During the advance of the Cordilleran ice sheet the valley of the Clark Fork was crossed and obstructed by the ice near the Montana-Idaho boundary. The resulting flood in its own valley and those of its tributaries is known as Lake Missoula. The

water was 1,000 feet deep over the present site of Missoula from which place the lake spread star like, occupying all connecting valleys south of the ice front and below a level of 4,200 feet.

At times, this put virtually all of the Bitterroot Valley under a glacial lake. The eastern slopes of the Bitterroots show evidences of more glacial action than does the Sapphire side. Whereas glacial moraines exist at the mouths of Skalkaho, Daly, Willow, and Burnt Fork Creeks on the Sapphire side, the same phenomena may be observed all along the west side of the valley (Sahinen 1957).

Low terraces edge the broad, irregular flood plain of the Bitterroot River, the higher terraces exist between tributary valleys. Wave cuts from Pleistocene Lake Missoula occur up to 4,200 feet on both sides of the valley (McMurtrey, Konizeski, and Stermitz 1958:9).

The valley itself reposes on Tertiary sediments of an unknown but great depth, some of which are exposed on high terraces on the east side of the valley (McMurtrey, Konizeski, and Stermitz 1959:10). McMurtrey and Konizeski (1956) indicate extensive valley fill during this time, followed by great erosional movements which resulted in the approximate physiographic features of the present Bitterroot Valley. A river, ancestral to the Bitterroot, cut a broad inner valley, and tributaries cut side valleys down to the base level of the main river. During the Quarternary period, aggradation in the tributaries caused the base level of the Bitterroot River to be several hundred feet higher than it is at the present time (Lindgren 1904).

Climate

The valley, as a whole, is characterized by mild winters and cool summers, very little wind, and light precipitation, although it rains more in the Bitterroots than in the Sapphires and the valley. The rain pattern has two maximums, one in May and June as in the Great Plains, and the other in fall, like the Pacific northwest (McMurtrey and Konizeski 1959:7-8). The south end of the valley is slightly warmer than downstream, evidenced by climatic data at Hamilton, near the upper end of the valley, and Stevensville, further downstream (McMurtrey and Konizeski 1959:8).

	<u>Hamilton</u>	<u>Stevensville</u>
Mean minimum temperature	33.2°F	30.2°F
Mean maximum temperature	59.2°F	58 °F
Highest recorded temperature	103.0°F	102.0°F
Lowest recorded temperature	-39 °F	-37 °F
Length of growing season	130 days	113 days
Average date of last killing frost	May 16	May 25
Average date of first killing frost	Sept. 23	Sept. 15
Average annual precipitation	12.16 in.	12.64 in.

Flora

The Bitterroot Valley vegetational or life zones range from alpine to valley bottom, and each zone is characterized and is recognizable by distinctive climax (preponderant) vegetation (Oosting 1948).

The uppermost zone in the Bitterroot valley, the alpine tundra region, is characterized by low, mat-like vegetation and large amounts of grasses and sedges. Mosses and lichens grow abundantly,

and the growing season is short with relatively low temperatures (Oosting 1948:238).

The transition from alpine tundra to subalpine forest is characterized by a gradual thinning of trees, which appear in a dwarfed and twisted form known as Krummholz. This timberline consists of trees which can not survive in the tundra above and can not successfully compete with the climax species below. Engelmann spruce (Picea engelmannii) and subalpine fir (Abies lasiocarya) climax the subalpine or spruce-fir vegetational zone.

Below this is the montane vegetational zone, or Douglas fir climax. Part of the montane zone, yet usually below the Douglas fir belt, is the ponderosa pine climax. Little shade is formed, and thick grasses afford abundant ground cover. The only exception to the ponderosa dominance is found along streams and drainage lines, where narrow leaved cottonwood (Populus angustifolia) predominates (Oosting 1948).

The woodland-valley bottom vegetational zone merges onconsistently with the belt immediately above it. In the Bitterroot Valley this area is climaxed by sagebrush (Artemesia tridentata) and mountain mahogany (Cercocarpus parvifolius), but ponderosa pine is found at the river's edge.

The trees, aside from being climax markers, were utilized as food sources. The cambium layer from Pinus ponderosa and

sometimes Pinus contorta was used in the spring when the sap was running (White 1954). Nuts from the ponderosa were also used.

Other food sources used by historic Flathead inhabitants were roots, tubers, berries and stems, which were available at different periods of the year. Some of these more commonly used and available in the Bitterroot Valley include bitterroot tubers (Lewisia rediviva), chokecherry (Prunus melanocarpa), camas (Camassia quamash), serviceberry (Amelanchier alnifolia), and wild strawberry (Fregaria vexca).

Some areas of plant sources are ethnographically documented. For example, camas was found on low terraces just above the Bitterroot River and east of Corvallis, according to Ellen Big Sams, a Flathead informant. She also reported gathering camas at Lake Como, south of Darby (Malouf unpublished notes). Bitterroot was also gathered in this area, as well as in the lower end of the valley, toward Missoula.

Fauna

The fauna in the valley is varied and includes or at one time included several forms which were used by the Pend d' Oreille and the Flathead for either their hides or for food. Among them are big horn sheep (Ovis canadensis), rocky mountain goat (Mazama montana), black bear (Euarctos americanus), moose (Alces americanus), mule deer (Odocoileus hemionus), white-tailed deer (Odocoileus virginianus), coyote (Canis latrans), wolf (Canis lupus),

lynx (Lynx canadensis), and elk (Cervus canadensis). Other smaller mammals found in the valley are beaver, muskrat, raccoon and skunk and numerous smaller rodents. In addition, many species of song-birds, hawks, magpies and ravens are present.

Fish found in the Bitterroot River and its tributaries, which were used for food, are cut-throat trout (Salmo clarkii), whitefish (Coregonus), squawfish and suckers (Catostomus).

CHAPTER III

ETHNOGRAPHIC AND ARCHAEOLOGICAL DESCRIPTION OF AREAS ADJACENT TO THE BITTERROOT VALLEY

Because a part of my original premise was that the geographical position of the Bitterroot in relation to surrounding cultural areas would have a direct bearing on the prehistory of the valley, I thought it necessary to provide a brief resume of each of the areas, describing the geographical location, a description of archaeological work done in each area, and information on the historically documented groups in each.

The Columbia Plateau

The Columbia Plateau according to Fenneman (1931), covers about 100,000 square miles in Washington, Oregon, and Idaho. It is bounded on the west by the Cascade Mountains, on the north and east by the Rocky Mountain Physiographic Province, and on the south by the Great Basin. The first three boundries are definite geographic barriers, but the Plateau-Great Basin boundry is arbitrary. Whereas Fenneman's physiographic province has definite northern boundries, Willey, who views the same region as an ethnographic area, does not give a definite northern boundry (Willey 1966).

The southern part of the Plateau has a vegetation similar to that of the Great Basin--semi-arid, with only cactus and sagebrush cover. The northern portion is heavily forested and has more precipitation, as it extends into the Canadian Rockies (Willey 1966:397).

Both Salishan and Sahaptin speaking peoples inhabited the Plateau, with the former inhabiting, generally, the northern portion, and the latter living south of the Columbia. Far to the south, some of the Northern Shoshoni groups controlled the area peripheral to the Great Basin.

Ethnographically, Plateau Indians between 1800-1840 were analogous to the archaeological description of the Northwest Riverine tradition of the Late Prehistoric. They followed a seasonal round, living in river villages during the winter. Root gathering, berry picking, and fishing industries were carried out by temporary small groups in specific locales. Early ethnohistorical accounts revealed that the people of the 19th Century were living much as their archaeological predecessors must have done (Willey 1966).

Butler (1962) and Cressman (1960) formulated sequences for human occupation in The Dalles-Deschutes region, beginning with the Old Cordilleran period at 11,000-9,000 years before present to about 7,000 B.P. This period was represented by hunting and fishing industries. Stages proceeded through the use of seed

food plants, represented by basalt grinding slabs, and mortars. Gradually, a more river oriented artifact assemblage appeared. This is, various types of stone fish gorgets, net weights, pipes, and adzes appeared (Willey 1966:400-401).

Other important Early and Middle Period sites were found in the McNary Reservoir (Shiner 1961), Lind Coulee, where the projectile points and faunal debris closely resembled that of the Plains *→ brson 4* (Daughtery 1956) and eastern Idaho (Swanson 1962), which resembled that of the Desert Tradition (Willey 1966:403). Later Period and Northwest Riverine Traditions have been defined by Butler (1959), who provided dates of from A.D. 500 to about 1,800 A.D. Shiner (1961) and Osborne (1957), and Collier, Hudson and Ford (1942) also discussed sequences for the tradition. Although Swanson (1962) differed slightly in sequences, there was general agreement that a boreal oriented group of people lived in the Plateau somewhere between A.D. 500 and 1,300 A.D. dependent upon whose view one accepts (Willey 1966:404).

Historically, various groups of Salishan peoples were documented throughout the area. Trade routes also existed between the northern Plains and the Plateau (Griswold 1970).

The Great Basin

According to Willey (1966:342), the Great Basin consists of most of Nevada and Utah and including parts of California, southern Oregon, southern Idaho, and south-western Wyoming. Although

similarities can be seen throughout the western United States, the Great Basin is considered the area where the Desert Culture is found at its purest form. As the Desert Culture spread to areas such as New Mexico and Arizona, it was replaced by south-western native farming (Willey 1966:356). Linguistically, the Great Basin peoples during historic times were Uto-Aztecan and Hokan. They were semi-nomadic, both hunting small game and collecting desert plants. Logically, camps were located around water sources -- rivers, water holes, and lake shores. Due to the extreme dryness in some of the sites, much basketry and other wood, fiber and hide materials which might otherwise perish, were found. Some stone grinding implements were found, as were bone awls and various types of dart points. Well known archaeological sites which are representative of the area are Danger Cave, Utah (Jennings 1957), Humboldt Basin, Nevada (Heizer and Krieger 1956) (Loud and Harrington 1929), and Hogup Cave, Utah (Aikens 1970).

The Shoshoni, former residents of the Basin, were the first peoples to obtain horses and bring them to the Montana area (Haines 1938). Historic groups of Shoshoni reside in the Lemhi and Salmon River country of Idaho, just across Lost Trail Pass at the southern end of the Bitterroot Valley. The Shoshoni also had a part in the westward movements of the Plains Salish (groups of Pend d' Oreille and Flathead) being forced across the Continental Divide (Teit 1930).

The Northwestern Plains

Wedel (1961:240) described the Northwestern Plains as

...beyond the Missouri, in the western Dakotas, Wyoming, Montana, and northward...the drainage basins of the Yellowstone and the Upper Missouri, as well as much of the North Platte drainage. Beyond the International Boundary, they sweep northward for another 150 miles to or a little beyond the 52nd parallel, taking in most of the Palliser Triangle and the drainage of the South Saskatchewan. They terminate on the west where the short grass reaches the pine-clad slopes of the Rocky Mountains, except in Wyoming. Here...extend to the Continental Divide, and include the Bighorn, Wind River, Laramie, and other basins partially enclosed by the easternmost ranges of the Rockies.

Containing vast quantities of arid land, low rainfall and the short growing season, the area was not a region in which life was based on prehistoric horticulture (Wedel 1961:240-241).

During historic times, inhabitants of the area lived primarily by participating in "the chase" due to the presence of horses and bison (Wedel 1961:241). However, prior to this time early inhabitants apparently enjoyed more group and communal types of hunting, such as game traps or jumps (Wedel 1961:244). Man lived in rock shelters and caves, where possible, and created various types of rock art (Wedel 1961:244). Sites of any stratigraphic depth and which indicate occupation over a long period of time are rare. Pottery did not attain the variety and quality found to the east and the south; it was generally assumed to be a late development in the area, coming in with the Shoshoni from the south and with other groups up the Missouri.

←
Spencer

In general, the cultural sequence seems to have begun from a big game hunting focus, with long hafted points and developed through the Middle Period during which the area's inhabitants continued to hunt all available animal forms with less emphasis on bison. However, hunting bison still remained predominant in the eastern section. Bone artifacts appeared in greater quantity in the archaeological record than previously, perhaps due to better preservation (Mulloy 1958:325-326). In the western part of the region, grinding implements began to appear frequently, indicating an increase in food gathering (Mulloy 1958:327). Mulloy (1958:328) felt that this may indicate an influx of Great Basin peoples into the Plains who retained their food gathering economy, while hunting. Malouf felt that the same phenomena indicates influences from the Plateau area (Malouf 1962b).

The archaeological evidence suggested that small groups of nomadic people lived in caves, but more often occupied open camp sites, dwelling in perishable shelters. In some portions of the region food gathering appeared to be the major mode of subsistence, and although some large game animals did appear, they were not the mainstay. In the 1700's increased groups of people moved into the area, perhaps due to the availability of the horse (Mulloy 1958:334-335).

During historic times several Indian groups lived on the Northwestern Plains. Among these tribes were the Blackfeet, the

Plains Cree, the Atsina, the Assiniboin, the Crow, Teton Dakota, Arapahoe, Cheyenne and Shoshoni.

The buffalo was a main source of food and clothing; however, the extent of useage was dependent upon the horse. Although various tribal groups obtained horses and the equestrian artifact assemblage at varying rates, their possession of horse and dependence upon the animals had a great effect upon the people. They became more mobile, and their material possessions reflected this. Traditional weapons, such as the bow and shield, were modified for use on horses. Further, it was then easier to raid neighboring groups. (Lowie 1954; Wissler 1927). With the advent of the horse, groups living out of the Plains even made forays into the valleys west of the Divide, and in turn, the western groups found it possible to range out onto the Plains (Teit 1930); (Turney-High 1937).

The Western Montana Region

The Western Montana Region, defined by Malouf (1956) as the Montana Western Region, lies between the Great Plains on the east and the Columbia Plateau to the west. Up until 1950, almost nothing had been done on the prehistory of the area, except for Elrod (1908) and Turney-High (1937). Since that time several more reports have been written, including Taylor (1937), Malouf (1956, 1964, 1965, 1966), Griswold (1953, 1970), Barnier (1971), Swanson (1966) and Fredlund and Fredlund (1971). Malouf (1956:50) stated

that occupation sites are the most numerous type found and occur primarily in river valleys or around major lakes. Malouf also reported on pictographs, burials, battle pits, rock cairns, and trails in the Flathead Lake area (1956:50-52).

Fredlund and Fredlund (1971), and with LaCombe (1971), found scattered occupation and game drive sites at high altitudes in Western Montana, some of which are in the Bitterroot Mountains. Research in the same area is currently being conducted by Bonnie Herda (personal communication).

Malouf (1956) in his study of the Montana Western Region, found that lake strand lines can provide a sequential dating method, according to point types and other associated artifacts. At Flathead Lake in northwestern Montana, he found three discernable levels. The lowest and present shore level exhibited the most recent material--primarily corner-notched points and a few side-notched points. Some trade objects were found in association, indicating slightly pre-contact to post-contact occupation.

The intermediate strand line, 35 to 65 feet above the present level, consisted of quartzite and basalt corner-notched and slightly stemmed projectile points. Also found were single notched points. The presence of grooved mauls may indicate the onset of Plains influences into the area (Malouf 1956:48). White trade goods were absent.

The oldest strand level, Level III, 135 feet above the present shoreline, showed a lack of grinding and pounding implements. Projectile points, again primarily basalt and quartzite, were corner notched and tended to be long in proportion to their width. Although the association was not definitely connected to a specific terrace level, points resembling Hanna and fishtail points were found along the 135 foot level at Flathead Lake. Such points were found in the lower levels of Pictograph Cave (Mulloy 1958), and have been dated at 4450 ± 125 years before present (Bentzen 1962). Ethnographically, the Western Montana Region belongs to Salishan and Kutenai peoples. The Flathead lived in both the southern and northern reaches of Western Montana, as have the Pend d' Oreille. The Kutenai have most often occupied the northern part. These people also lived on the Plains before they were forced westward by the Shoshoni (Teit 1930). Even after the Salishan people began to live west of the Divide, they still continued to make seasonal migrations to the Plains to hunt bison and carry on trade with some of the Plains groups (Teit 1930), (Gunther 1950), (Ray 1939).

CHAPTER V
ARCHAEOLOGICAL SITES IN THE BITTERROOT VALLEY
AND VICINITY

A total of 19 sites were recorded, some of which were in the main part of the Bitterroot Valley, and others in tributary valleys. The only site outside of Ravalli County was 24M01082, in Missoula County. The sites were spread geographically from the mouth of the Bitterroot up the two forks which form the river's head (fig. 2).

Due to the paucity of sites, no groups or classes of sites have been formulated. The only observable site type which was predominant was that of rock art, specifically pictographs. A special section deals with comparisons of rock art from other areas with the Bitterroot specimens.

Descriptions of sites given in numerical order. Locations are shown in fig. 2. Legal locations of the sites are in reference to the Montana Principal Meridian.

24RA501 Spring Gulch Pictograph Site: SE $\frac{1}{4}$ of SE $\frac{1}{2}$ of Sec. 1,
T2N R20W

This pictograph site was previously recorded by May Vallance of Grantsdale, although no photographs or tracings were made at that



Fig. 3. 24RA501 solidly colored shield figures and figure with three fingers. All are done in red.

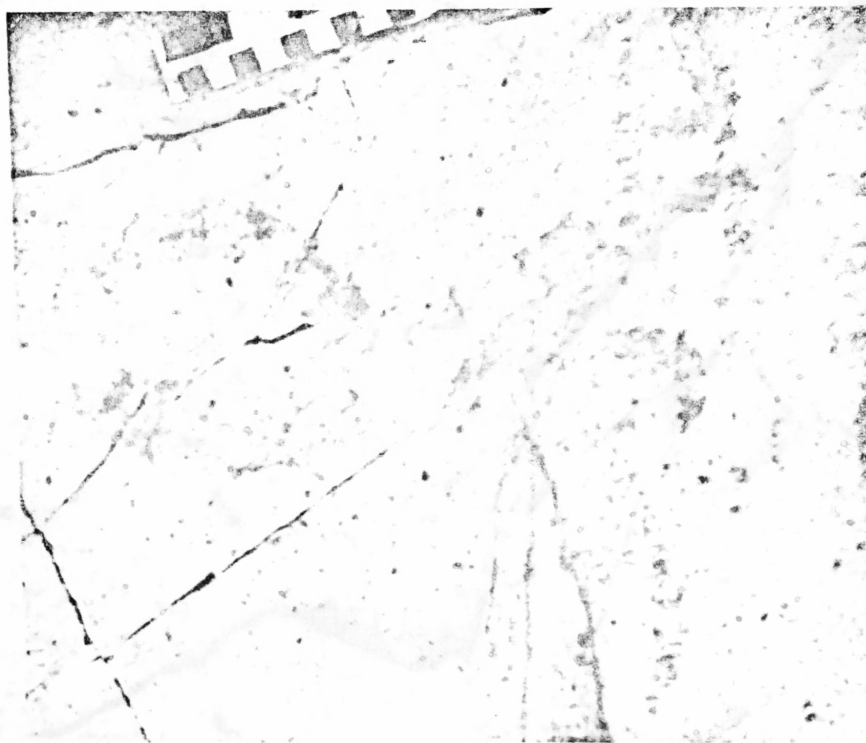


Fig. 4. 24RA501 solidly colored anthropomorphic figure and circular designs. All are done in red.

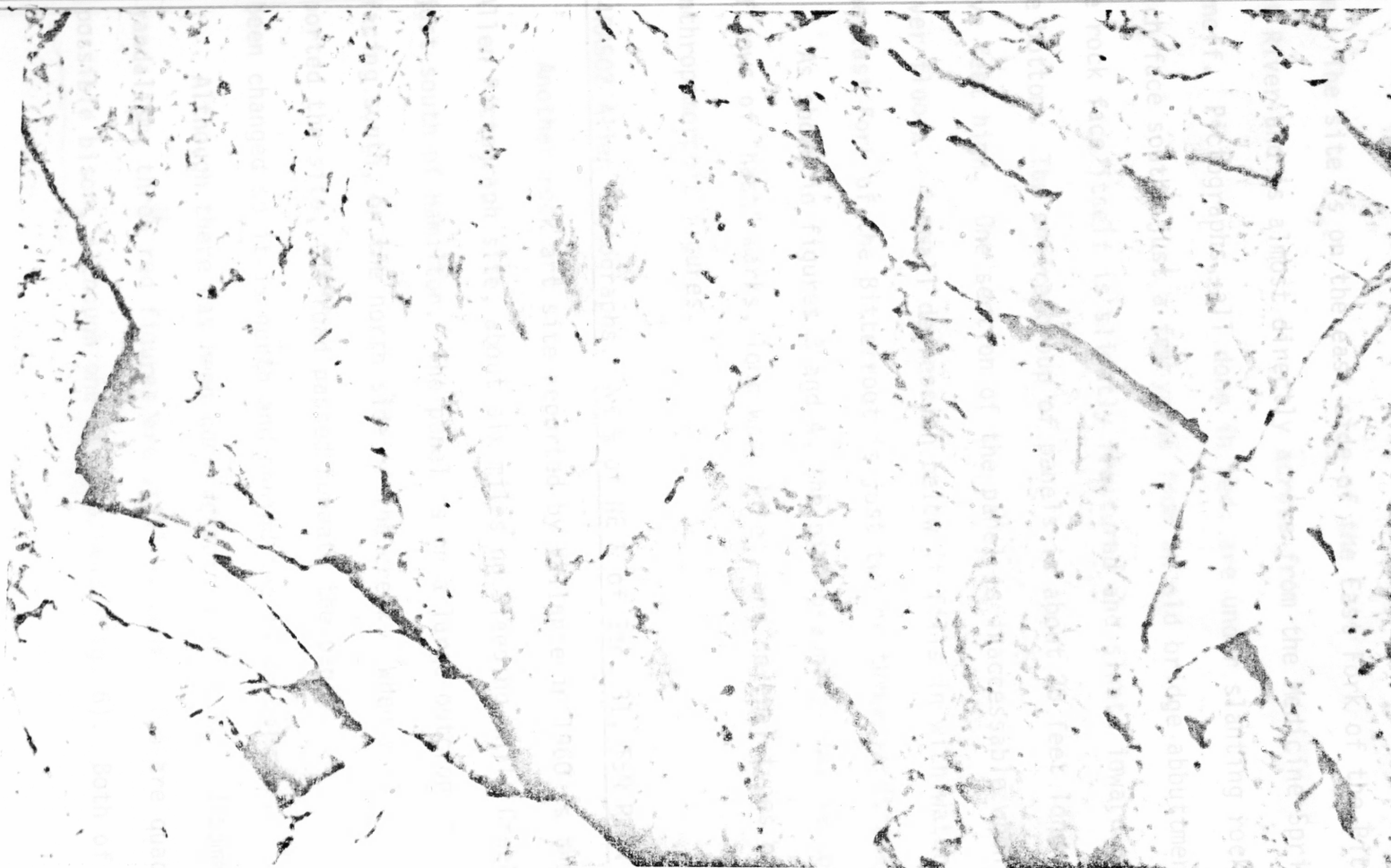


Fig. 5. 24RA501 Pictographs--anthropomorphic figure and counter lines. All the figures are done in red.


time. The site is on the east side of the East Fork of the Bitterroot River and is almost directly across from the Medicine Springs turnoff. Pictographs, all done in red, are under slanting rocks which face south, just a few yards from an old bridge abutment. The rock face itself is slightly fractured and slants inward at the bottom. The entire group of panels is about 20 feet long and five feet high. One section of the panel is inaccessible when the river floods. A small depression below it fills in with water, as the East Fork of the Bitterroot is just two or three yards away.

As shown in figures 3 and 4, the pictographs primarily consist of rows of "hash" marks, long wavy lines, and several types of anthropomorphic figures.

24RA502 Allen Pictographs: NW ¼ of NE ¼ of Sec. 31, T5N R20W

Another rock art site reported by Vallance in 1960 is the Allen Pictograph site, about six miles up Sleeping Child Creek, just south of Hamilton. The panel is on a large outcrop of rocks, facing south, on the north side of the creek. When Vallance reported the site, the road passed beneath the panel, but now it has been changed so it is north and behind the large outcrop.

Although there has been considerable weathering and some vandalism, three red figures are still evident. Two are quadrupeds, possible bison, although one lacks a head (fig. 6). Both of the



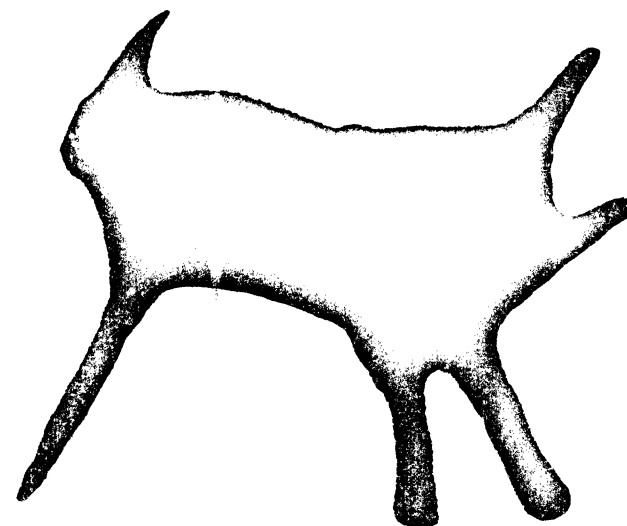
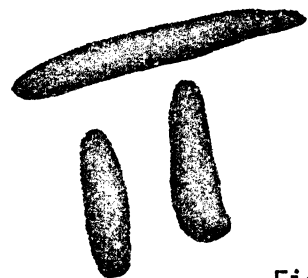
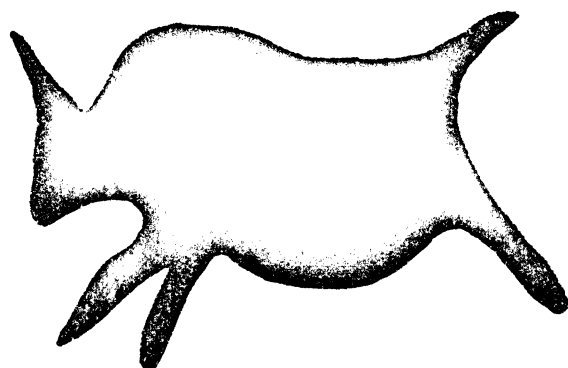


Fig. 6. 24RA502 pictographs of bison and capped counter lines.
All are done in red.

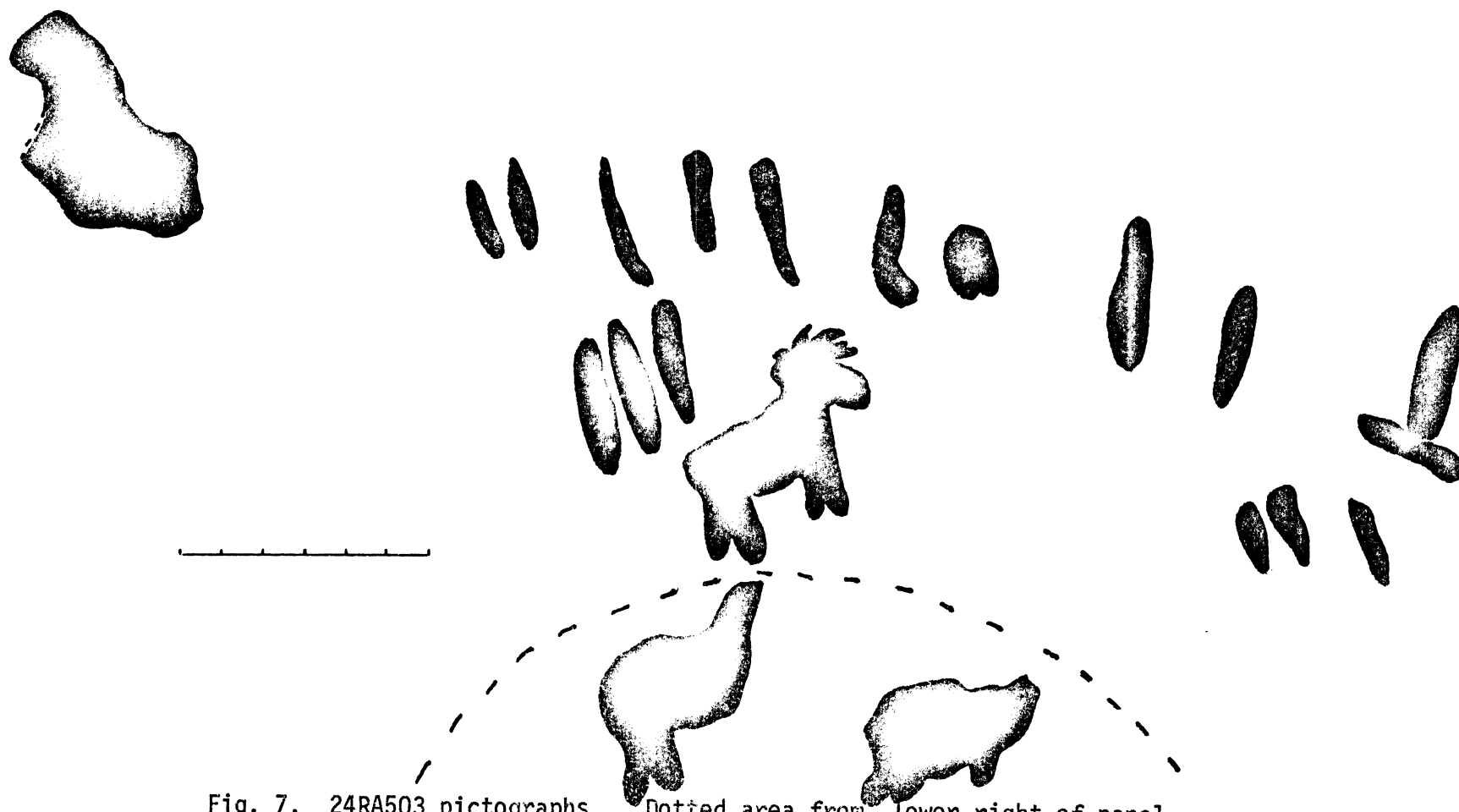


Fig. 7. 24RA503 pictographs. Dotted area from lower right of panel.

figures were extremely faint at the time they were recorded. The third figure consists of two vertical marks capped by a horizontal mark.

24RA503 Medicine Lake Bitterroot 22.

T2N R20W

On an overhanging rock wall... Medicine Tree (24RA513) on the east side of the... highway... 93 south of... The outcrop is visible... The panel, which... of red vertical lines and... (Fig. 7). In the lower... Although... the... plants... in excellent... the southeast...



Fig. 8. View of the East Fork of the Bitterroot looking south from 24RA503.

This... creek, was... although... of the red figures are... from... to eight feet... graphs are of an...

figures were extremely faint at the time they were recorded. The third figure consists of two vertical marks capped by a horizontal mark.

24RA503 Medicine Tree Pictographs: SE $\frac{1}{4}$ of NE $\frac{1}{4}$ of Sec. 22,

T2N R20W

On an overcropping rock high above and behind the Medicine Tree (24RA513) on the east side of the Bitterroot River on Highway 93 south of Darby is a pictograph panel, again oriented south. The outcrop is visible from the road, but it is not easily accessible. The panel, which is about three feet square, consists of red vertical lines and an animal figure, apparently with antlers (fig. 7). In the lower right of the panel are two amorphous figures.

Although the overhang creates a small sheltered area, the floor slants away too rapidly for habitation. The site itself affords an excellent view of the valley to the south of the ridge tops to the southeast and southwest (fig. 8).

24RA504 Hays Pictograph: NE $\frac{1}{4}$ of SW $\frac{1}{4}$ of Sec. 24, T5N R20W

This site, south of Hamilton and about seven miles up Skalkaho Creek, was also previously reported by Vallance in 1960, although no tracings were made of the figures themselves. Some of the red figures are located near ground level, while others are from six to eight feet above the ground. The most distinguishable pictographs are of an animal and part of an anthropomorphic figure with

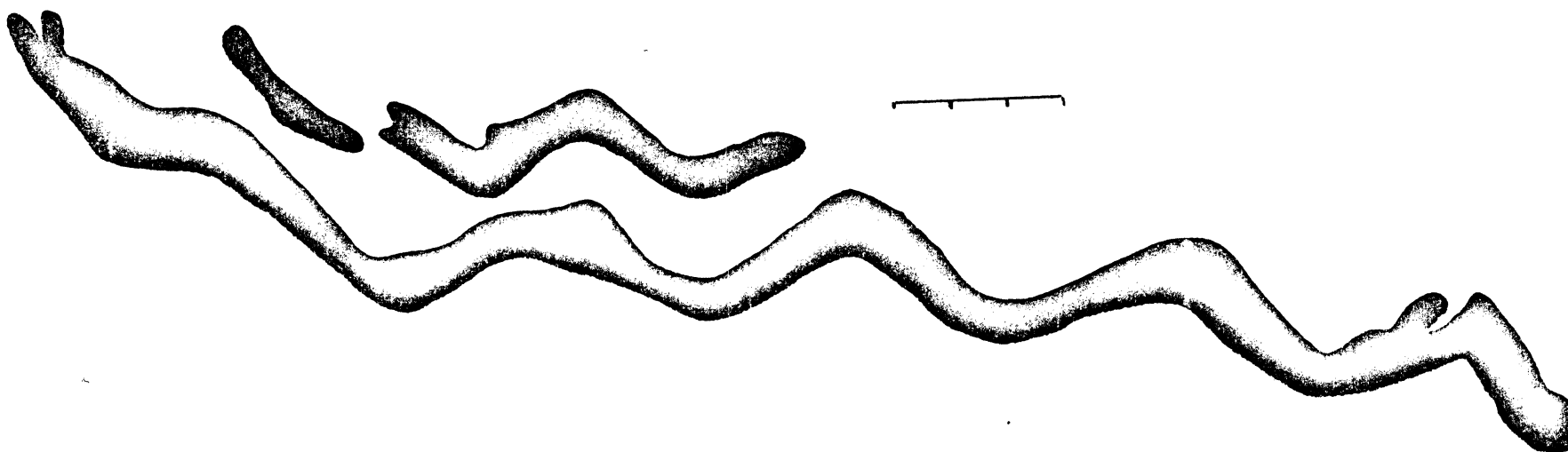


Fig. 9. Possible snake motif from 24RA504 done with red pigment.

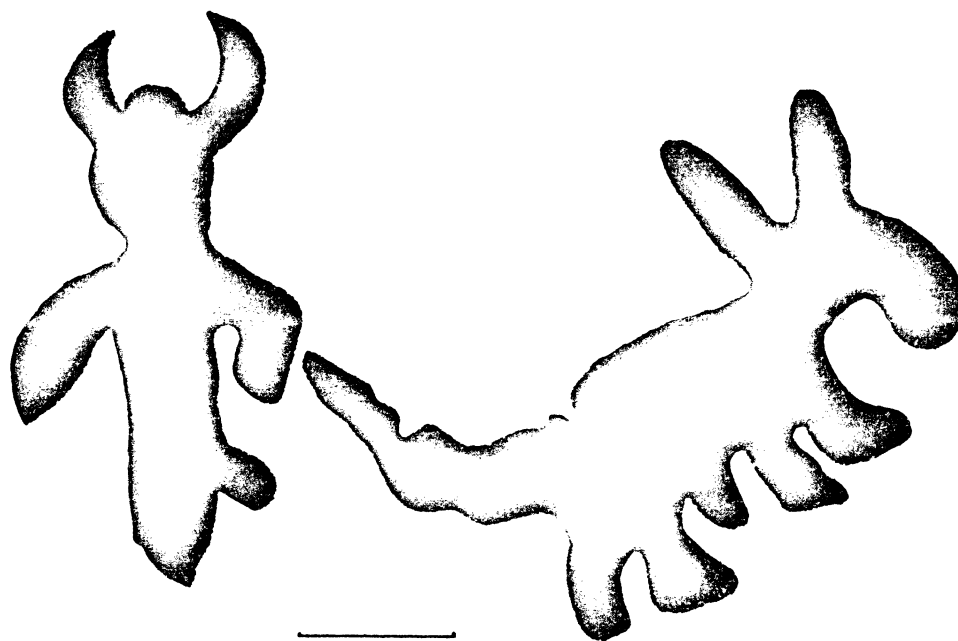


Fig. 10. 24RA504 pictographs. The solidly colored anthropomorphic figure on the left wears a horned headdress and lacks the lower portion of the body. The animal on the right may be a canine. Both are phallic and are done with red pigment.

what appears to be a horned headdress (fig. 10). Another discernable panel shows two wavy solid lines with projections at either end (fig. 9). The remainder of the panel consists of solid blotches of color.

A five foot by five foot test pit was sunk in the level ground below the panel, but no cultural materials were found.

24RA505 Indian Sphinx Pictographs: SE $\frac{1}{4}$ of NE $\frac{1}{4}$ of Sec. 23,

T5N R20W

Vallance also originally reported this site, one known to most residents of the area, possibly due to the fact that the panel is drawn upon a large granitic boulder which stands about 18 feet high and has gained the shape of a human profile from erosional processes. Also about $\frac{1}{4}$ mile north of Skalkaho Creek, the pictograph panel is oriented southwest. Some of the figures are rather high, and one needs a ladder to reach them. The ground below the rock is not level, as it is situated on a small hillside. All the pictographs are done in red pigment. There are four anthropomorphic figures, two of which appear to be holding a club or similar object and may be considered phallic. The same two may wear some sort of headdress. Another figure may represent a female, as it appears to have pendulous breasts and buttocks. The fourth figure is a full view with upraised arms. There are also two animals, which may represent dogs, wolves, or coyotes. Some dots and



Fig. 11. Photograph of 24RA505. Pictographs are located on the large rock to the center right of the picture.

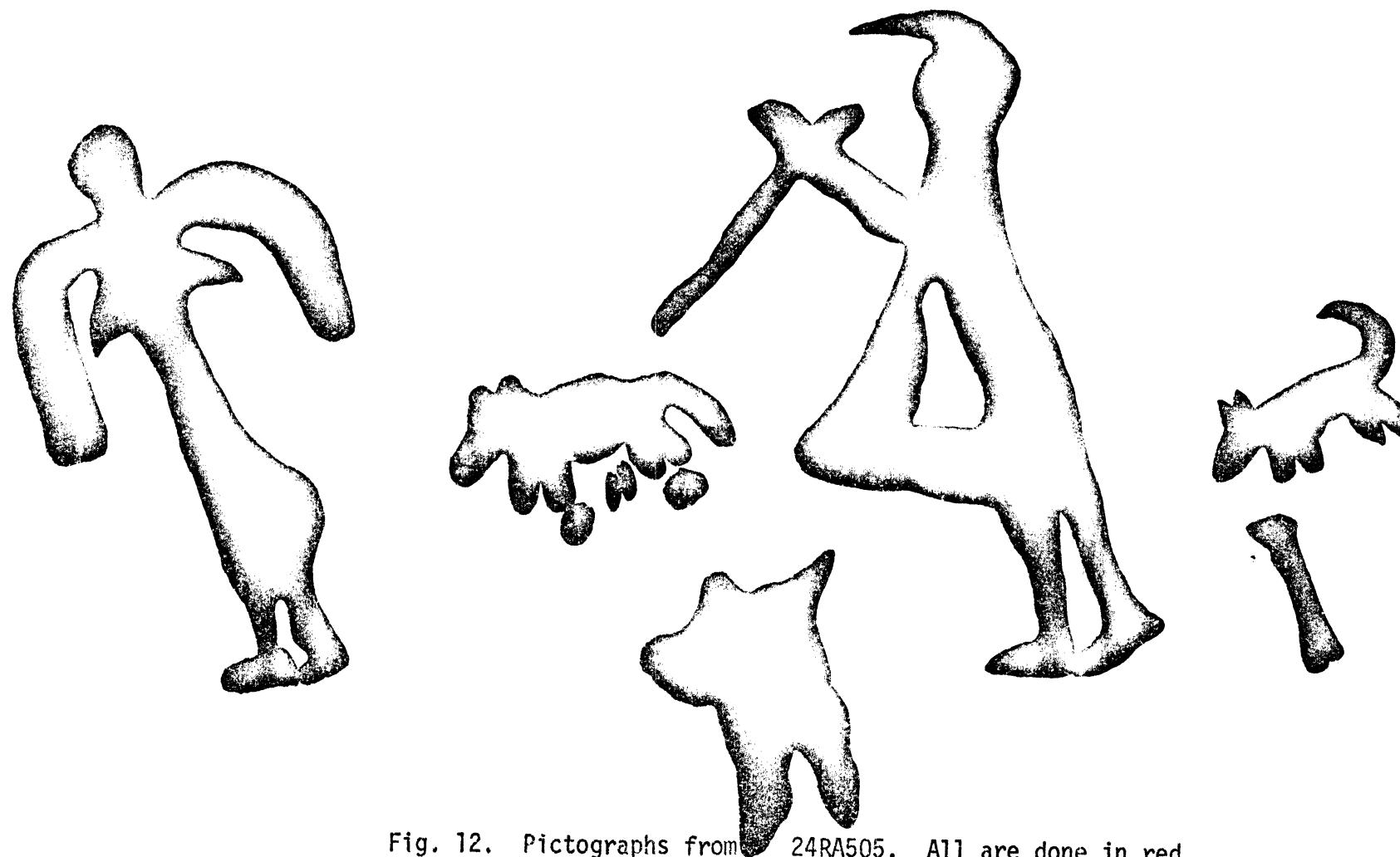


Fig. 12. Pictographs from 24RA505. All are done in red.

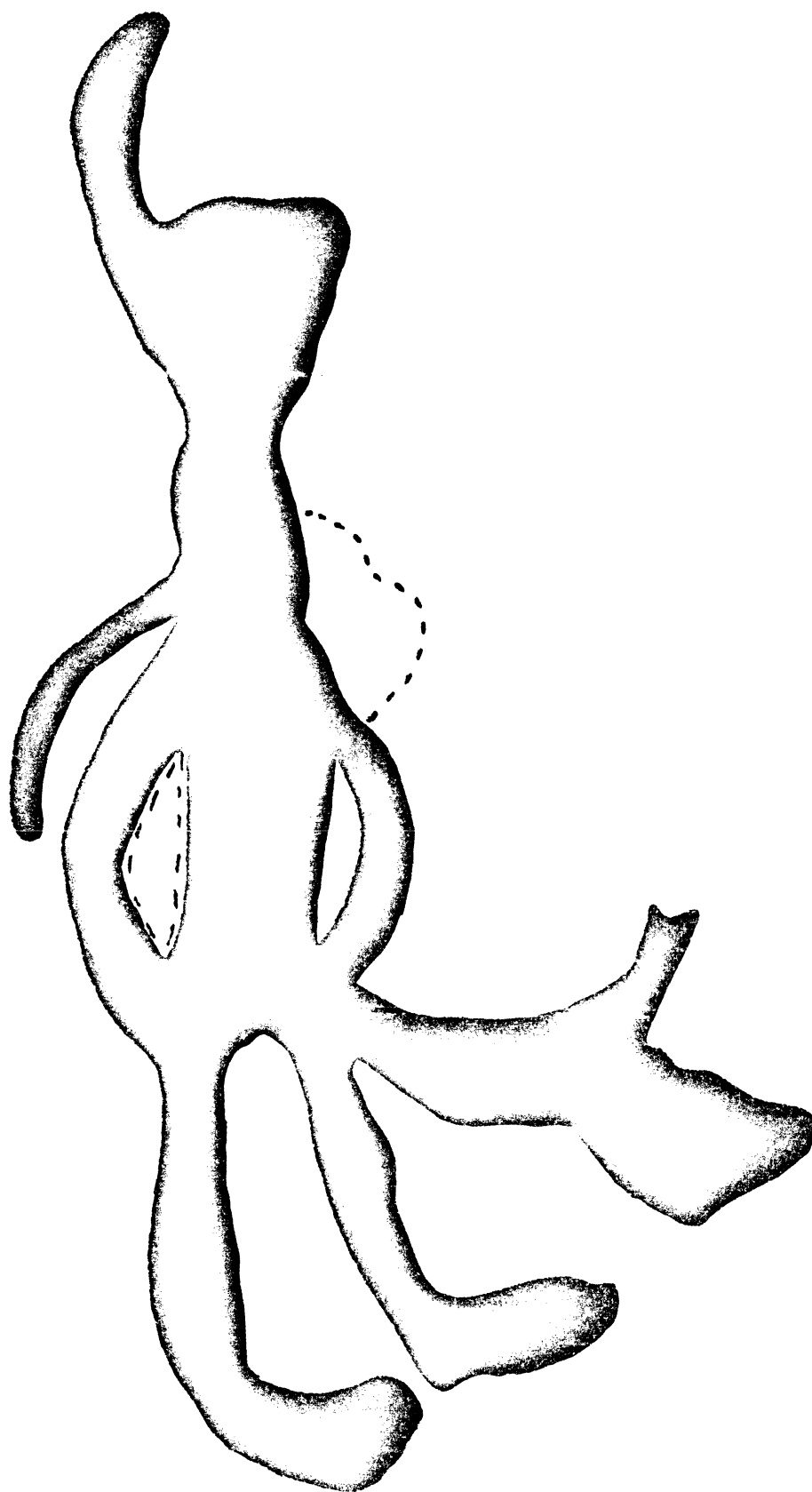


Fig. 13. Anthropomorphic shield figure from 24RA505.
It is also phallic.

vertical lines are also present, and some of the panel has weathered away, as part of the "face" of the "sphinx" has eroded (fig. 1).

24RA506 Blue-Eyed Child Site: SW $\frac{1}{4}$ of NW $\frac{1}{4}$ of Sec. 33, T5N R20W

The most extensive of all sites recorded is 24RA506, which consisted of a small rock shelter, a spring, and a panel of pictographs (fig. 14).

The whole site lies on a low terrace north of sleeping Child Creek, and another $\frac{1}{4}$ mile east of 24RA502. The rock shelter, which faces in a south-easterly direction, is situated at the base of a granite formation, the west side of which is the pictograph panel. The springs lie about 50 yards east of the rest of the complex. A branch of the creek used to flow within 20 feet of the granite formation. The rock shelter itself is about five feet eight inches high at the opening and six feet wide (fig. 15). It slants to less than two feet high at the back (fig. 16). Suitable floor area for occupation is only about six feet by six feet. The ceiling and walls appear to have smoke stains on them. The surface was covered with accumulated historic garbage, i.e., nails, wood, wire and boards. At various times small animal coops and cages were housed here. A test trench three feet wide and six feet long was excavated on the right side of the shelter. However, upon returning to the site to complete the work, it was discovered that the

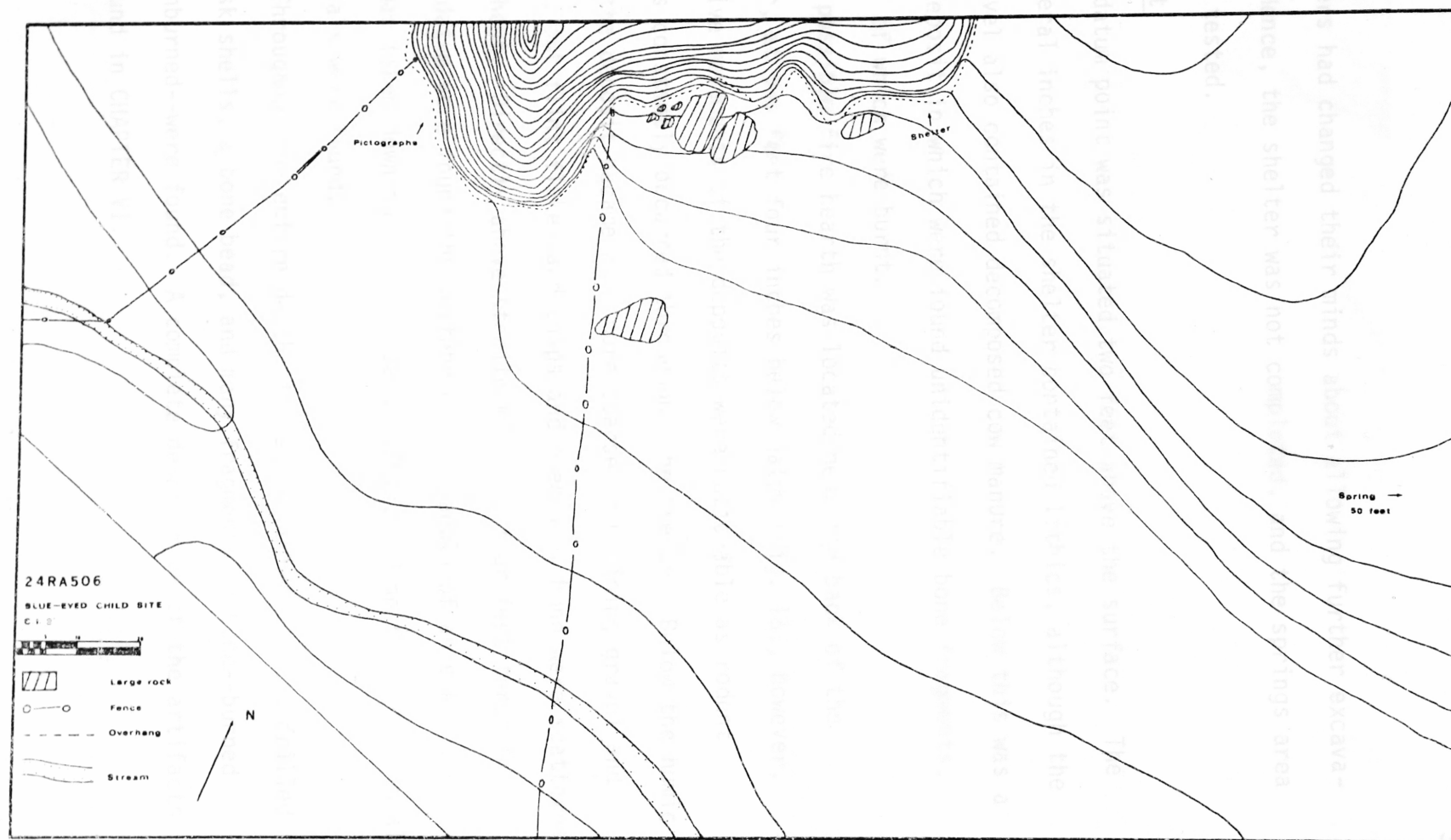


Fig. 14. Map of 24RA506.

Landowners had changed their minds about allowing further excavation. Hence, the shelter was not completed, and the springs area was not tested.

The Test

A datum point was situated two feet above the surface. The top several inches in the shelter contained lithics, although the same level also contained decomposed cow manure. Below this was a humic deposit in which were found unidentifiable bone fragments, several of which were burnt.

A possible fire hearth was located near the back of the shelter, at two feet four inches below datum (fig. 18), however, excessive movements of the deposits were noticeable as rodent burrows constantly occurred throughout the trench. Below the humic level the deposit became much more coarse, containing gravel and gneiss, but flint flakes and chips and pieces of bone were scattered throughout. Directly above sterile soil, at four feet three inches below datum were found the vertebrae and scapula of an elk. The test was taken down to six feet below datum, and no further cultural materials were found.

Throughout the entire depth, tools, retouched flakes, drilled mollusk shells, a bone bead, and many fragments of bone--burned and unburned--were found. A complete description of the artifacts is found in CHAPTER VI.



Fig. 15. Photograph of rock shelter at 24RA506.

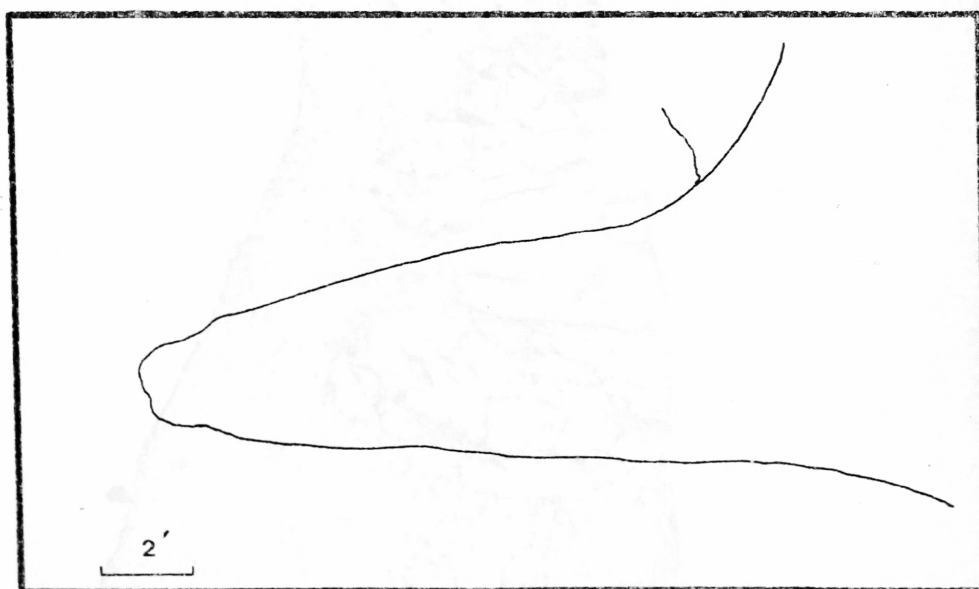


Fig. 16. Side profile of rock shelter at 24RA506.



Fig. 17. Photograph of entire site at 24RA506.

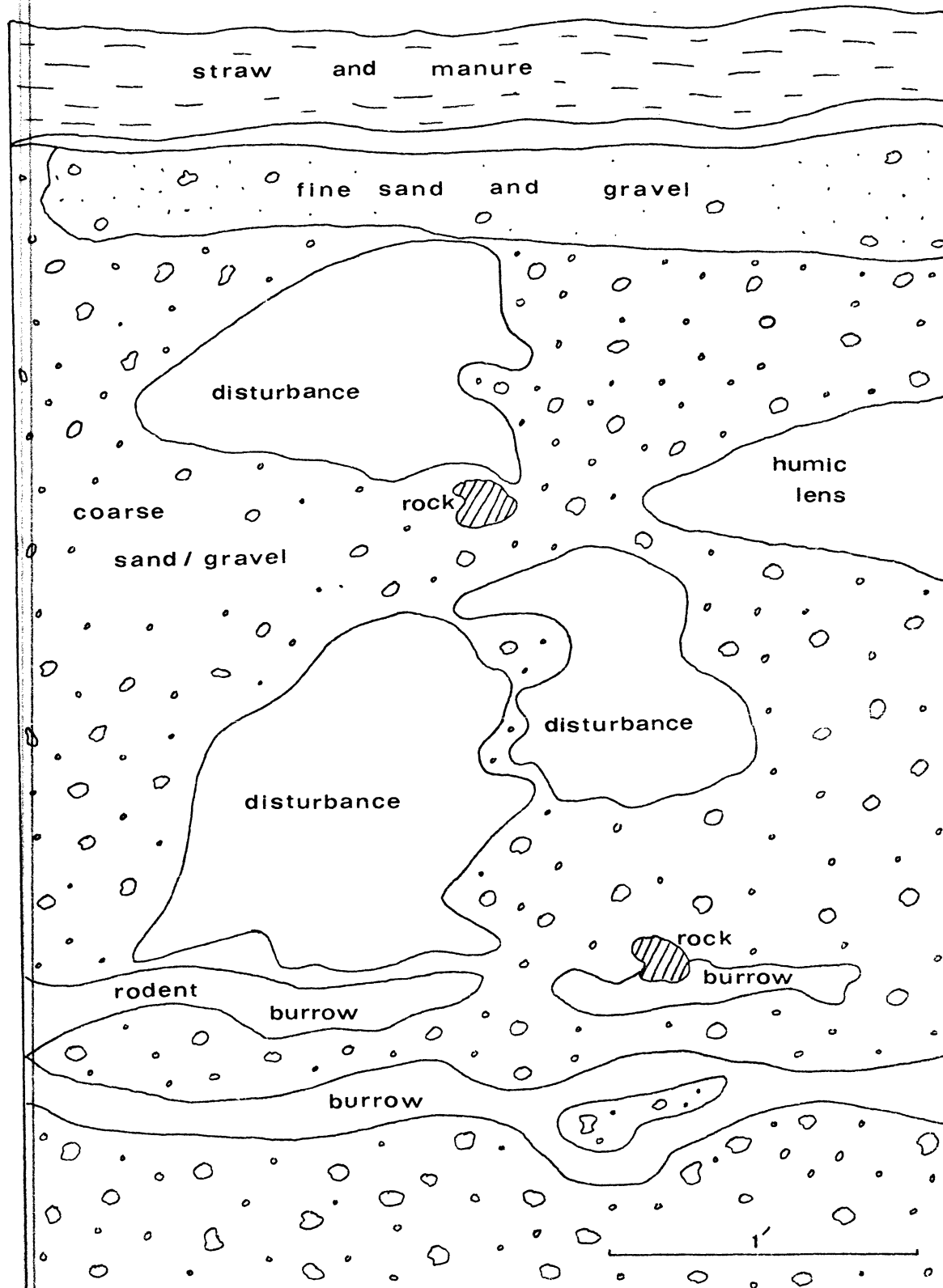


Fig. 18. Test-soil profile at 24RA506.

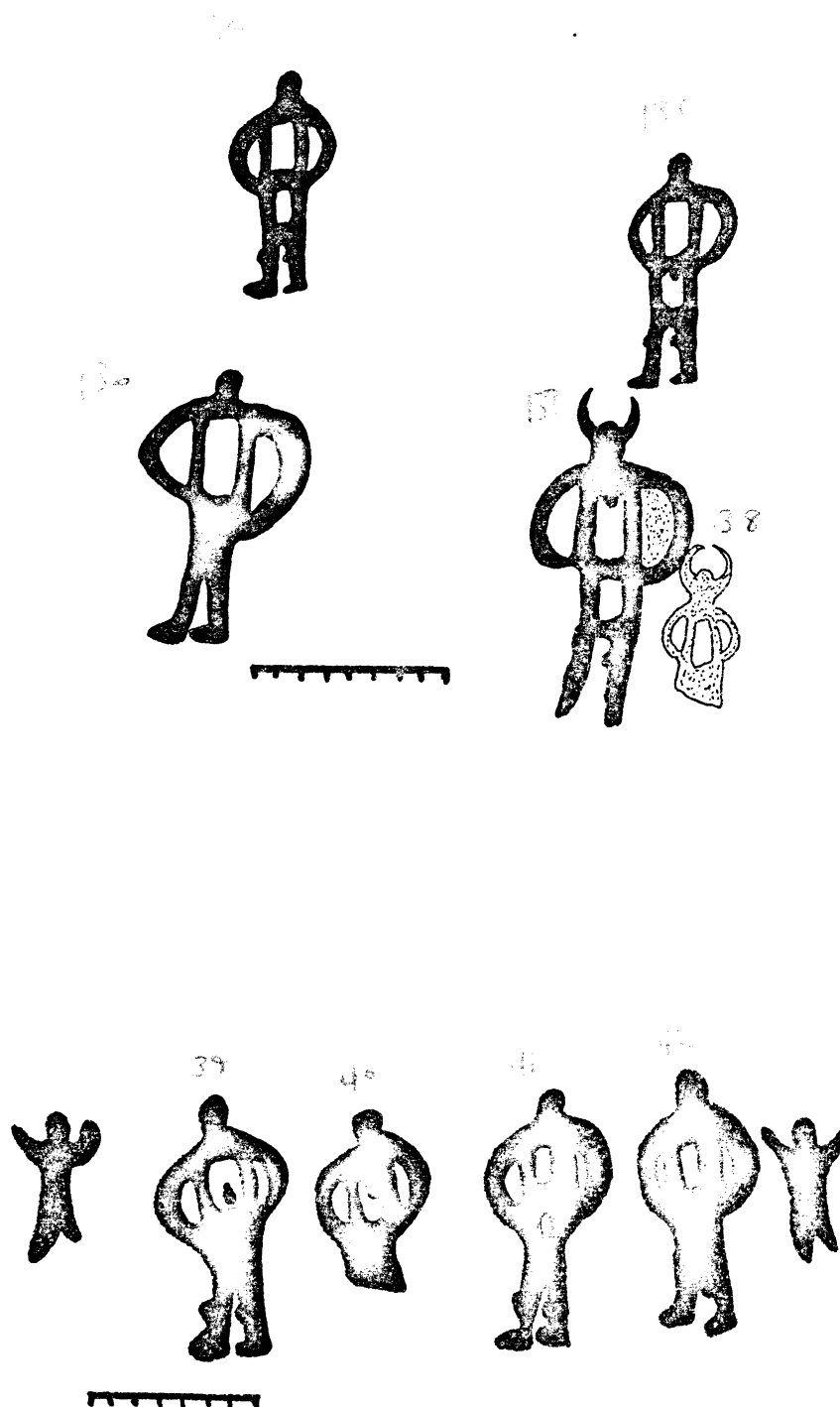


Fig. 19. 24RA506 pictographs--full panel. The upper portion is actually to the left of the lower drawing. The dotted areas are yellow. All others are red. Each increment is one inch.

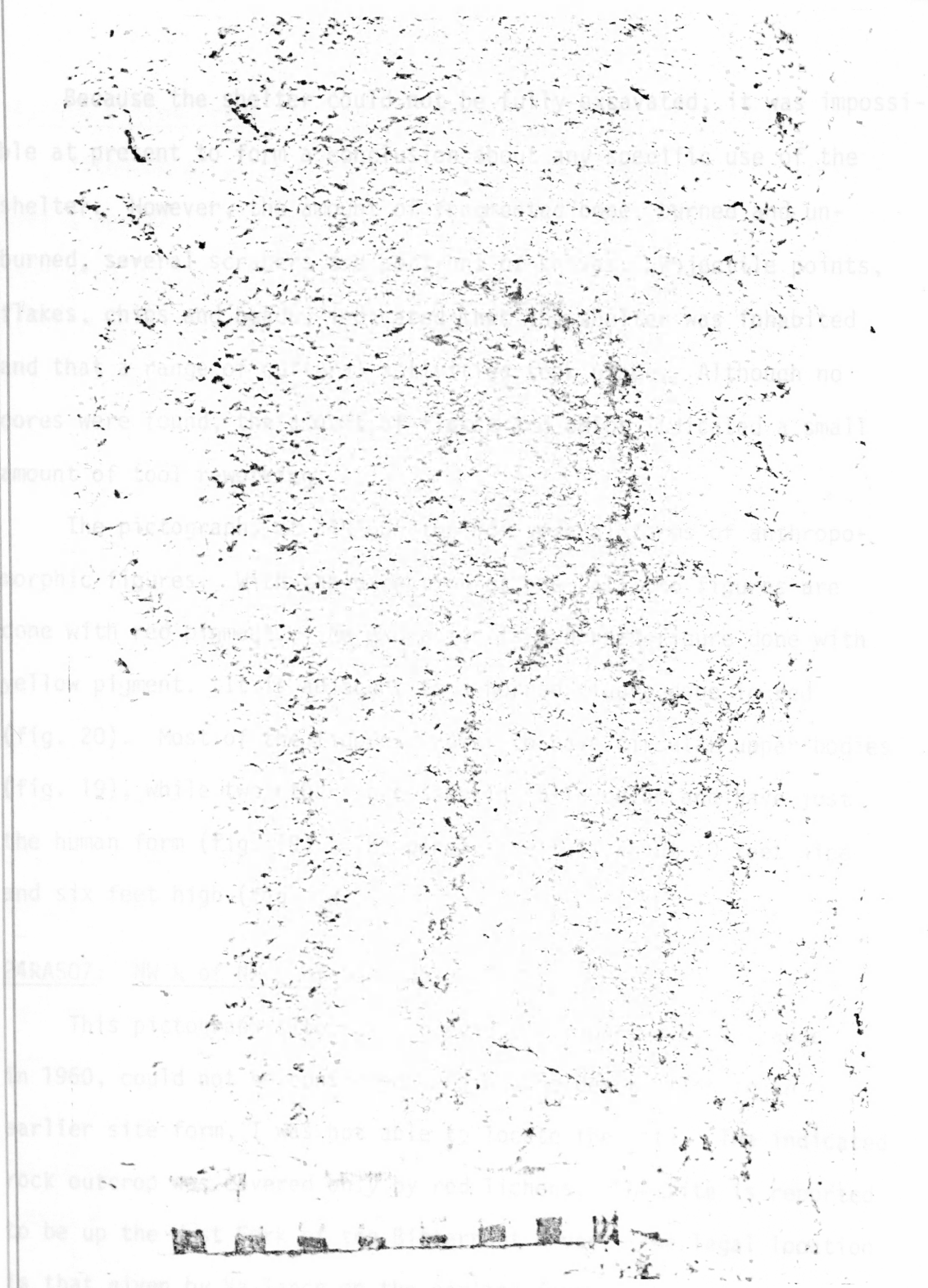


Fig. 20. 24RA506 pictographs--horned shield figures.

Because the shelter could not be fully excavated, it was impossible at present to form a conclusion about any specific use of the shelter. However, the amount of fragmented bone, burned and unburned, several scrapers and portions of knives, projectile points, flakes, chips and beads, indicated that the shelter was inhabited and that a range of cultural activities took place. Although no cores were found, the amount of flakes and chips indicated a small amount of tool reworking.

The pictographs at 24RA506 include several forms of anthropomorphic figures. With the exception of one, all the figures are done with red pigment. The exception is a horned figure done with yellow pigment. It is adjacent to a horned figure done in red (fig. 20). Most of the figures appear to have circular upper bodies (fig. 19), while two others are done in solid color and have just the human form (fig. 19). The panel itself is about 10 feet wide and six feet high (fig. 18).

24RA507: NW $\frac{1}{4}$ of NW $\frac{1}{4}$ of Sec. 35, T1S R21W

This pictograph site, also previously reported by Vallance in 1960, could not be confirmed. Using the description on an earlier site form, I was not able to locate the site. The indicated rock outcrop was covered only by red lichens. The site is reported to be up the West Fork of the Bitterroot River. The legal location is that given by Vallance on the earlier form.

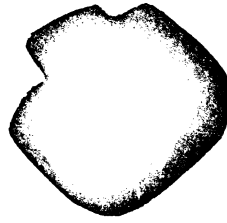
24RA508 Willow Creek Site: SW $\frac{1}{4}$ of SE $\frac{1}{4}$ of Sec. 2, T6N R20W

Although at present there are no indications of a site here, over a period of 70 years much material has been collected from this area, hence we gave it a site number. The Willow Creek site is situated on low grassy terraces on the north side of Willow Creek, one of the major drainages of the Bitterroot River on the Sapphire side of the valley. At the time the site was recorded, the property belonged to Quentin Brown. The hills which border the site on the east are glacial moraines. A large series of granitic boulders lie at the peaks of the rises, and local inhabitants say that many lithics were recovered from among them.

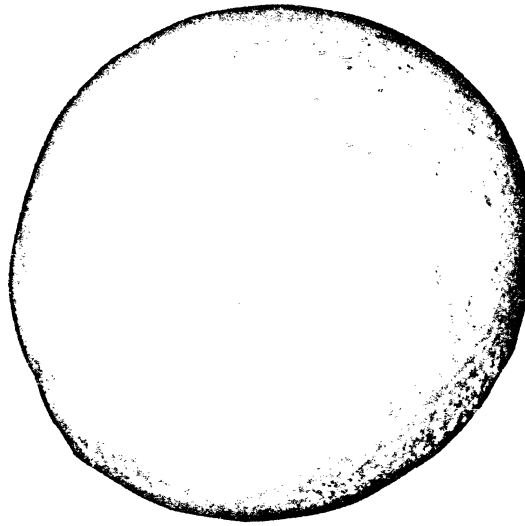
Two five foot by five foot test pits were put in the site to determine if there was any subsurface evidence of cultural material. Test pit one, on a flat, yielded a small basalt flake, and test pit two, dug in the vicinity of the boulders, was sterile. Both were excavated to the depth of two feet.

Willow Creek was at one time nearer to the site than at present. Several elongated mauls, made of granite and collected by local residents from the site, were observed.

This site is also adjacent to the area used by the Flathead to gather wild carrots and bitterroot, according to Ellen Bigsams (Malouf, unpublished field notes).



a



b



c

Fig. 21. Artifacts observed at 24RA509. a). pipe, b). oblate maul, c). edge-ground cobble.

24RA509 Davenport Site: SW $\frac{1}{4}$ of SE $\frac{1}{4}$ of Sec. 6, T5N R20W

On a secondary terrace west of the Bitterroot River and $\frac{1}{2}$ mile north of Big Creek is 24RA509. It consists of a small flat below and south of a glacial moraine. Several artifacts from the site were observed and photographed (fig. 21). Permission could not be obtained from the new landowners to test as to whether or not the cultural material extended below the surface.

24RA510 Marshall Burial: Possibly Sec. 19, T8N R20W The maps available were not sectioned.

This site, located on a gravel terrace just above and west of the Bitterroot River and between Sweathouse Creek and Victor, was reported to Dr. Malouf of the University of Montana Anthropology Department by Hal Marshall, upon whose land the site is located. A water line was being dug, and in the process, a green stone object was found about two feet below the surface. The trench was filled in, but Marshall marked the artifact's location with a stake, which was later accidentally removed by the water line workmen. Because I was doing research in the area it was given to me to excavate.

Test pit one, a five foot by five foot square, was situated so that the southern portion would include the place where the stake was supposed to have been. About seven inches of sand and gravel were removed before encountering a more moist loam, which was very loose in the center of the southern end of the test pit.

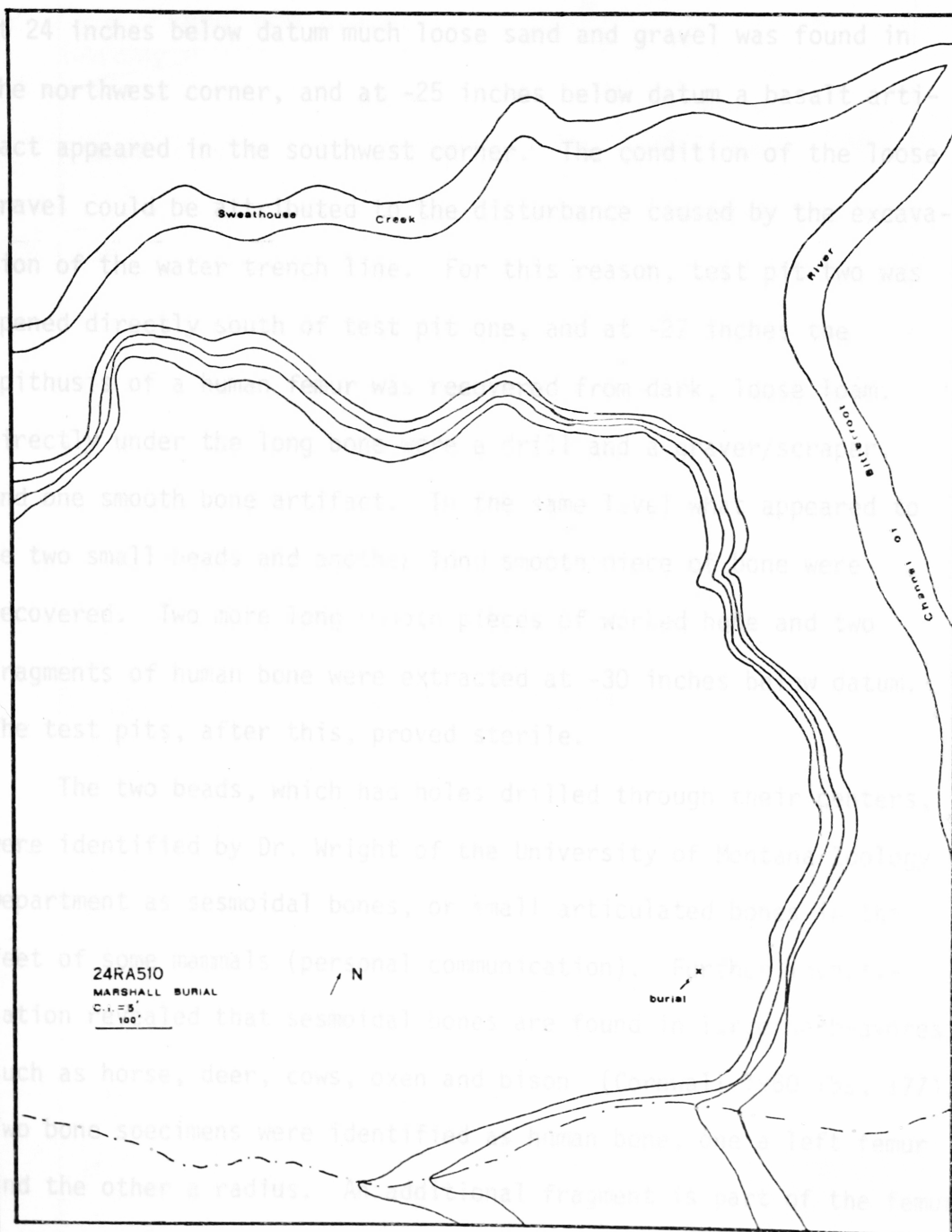


Fig. 22. Map of 24RA510.

At 24 inches below datum much loose sand and gravel was found in the northwest corner, and at -25 inches below datum a basalt artifact appeared in the southwest corner. The condition of the loose gravel could be attributed to the disturbance caused by the excavation of the water trench line. For this reason, test pit two was opened directly south of test pit one, and at -27 inches the epiphysis of a human femur was recovered from dark, loose loam. Directly under the long bone were a drill and a graver/scrapper, and one smooth bone artifact. In the same level what appeared to be two small beads and another long smooth piece of bone were recovered. Two more long smooth pieces of worked bone and two fragments of human bone were extracted at -30 inches below datum. The test pits, after this, proved sterile.

The two beads, which had holes drilled through their centers, were identified by Dr. Wright of the University of Montana Zoology Department as sesmoidal bones, or small articulated bones in the feet of some mammals (personal communication). Further investigation revealed that sesmoidal bones are found in large herbivores such as horse, deer, cows, oxen and bison (Cornwall 1960:152, 177). Two bone specimens were identified as human bone, one a left femur and the other a radius. An additional fragment is part of the femur.

Because of the nearly complete lack of human remains in what must be a burial, the inhumation was probably of the secondary type. That is, the body was exposed to the elements at another

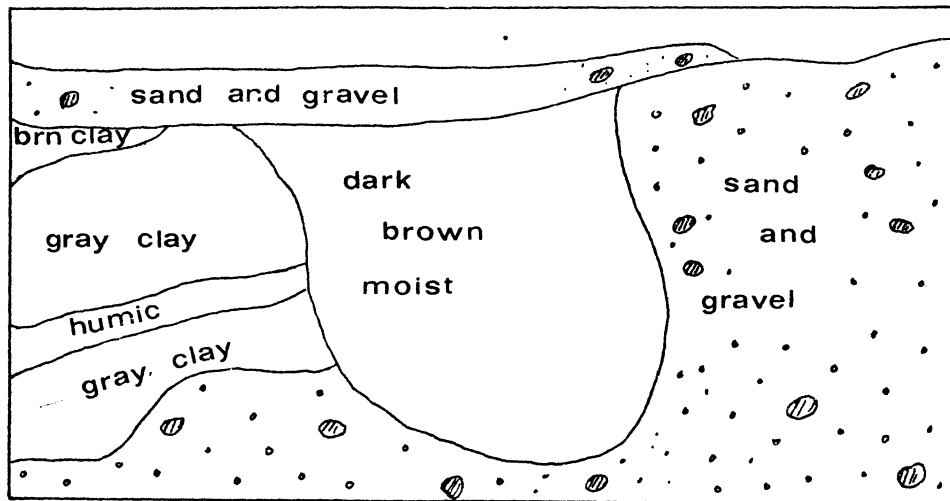


Fig. 23. 24RA510 test profile.

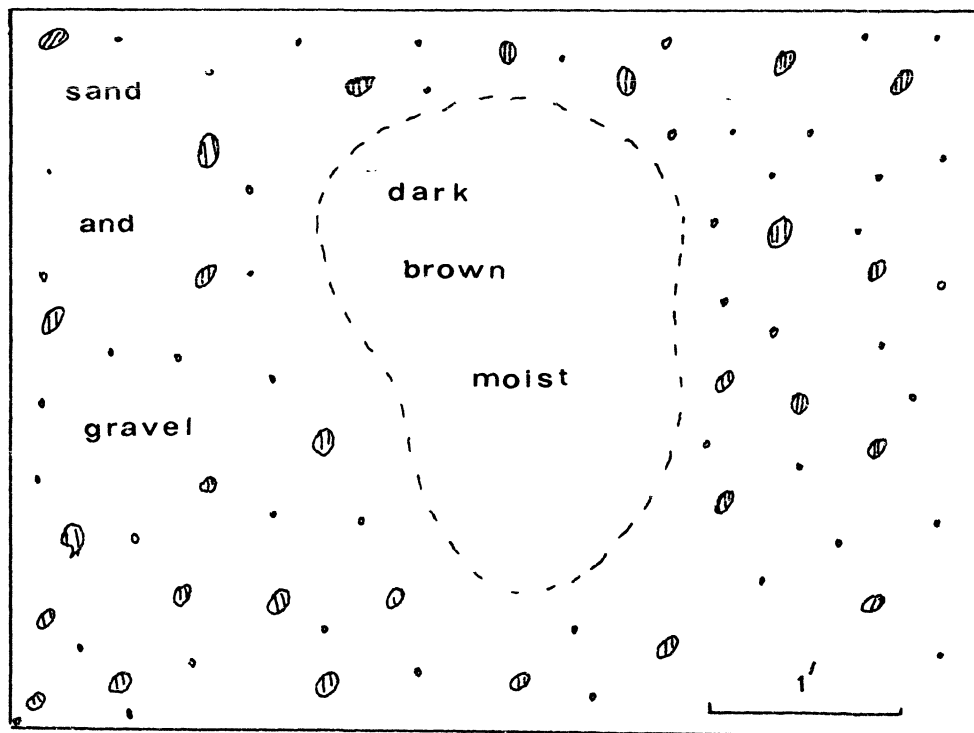


Fig. 24. 24RA510 Planview.

location, and then after a period of time, the remaining bones were placed in a pit with grave goods, Malouf (1956) at Flathead Lake, found secondary burials to be older in time than primary inhumations.

Collier, Hudson, and Ford (1942) mentioned pit burials on river terraces as characteristic of the later Plateau cultures.

24RA511 Indian Trees Campground: NW $\frac{1}{4}$ of NW $\frac{1}{4}$ of Sec. 16, T1S R19W

This site is presently a U.S. Forest Service campground south of Sula, Montana, on Camp Creek. It is an area profuse with large ponderosa pines, many of which have long scars where the bark has been peeled off. Some of these scars are five or six feet in length and two and a half feet wide. The remaining tree bark has curved around and grown inward (fig. 25). Small springs around the one half mile square area provide abundant water. Although some small basalt, ignimbrite and jasper flakes were found in small cuts created by running water, a test did not confirm subsurface occupation, nor were any tools recovered. White (1954) and Fredlund and Fredlund (1971) have found other such sites, and Malouf (White 1954) reported observing the Flathead actually stripping such trees to obtain the cambium layer, which is particularly edible during the spring when the sap in the tree runs.

→ Tachy-
lax
dum sp.

White (1954:7) reported on the practice in western Montana and northern Idaho. Lewis and Clark reported the Shoshoni doing the same at Lolo Creek, near the mouth of the Bitterroot River

Fredlund and others were making core samples, dated
scars in the [redacted] area as occurring
within the [redacted] [redacted] 74RA511, dated by the
Forest Service [redacted] Fredlund [redacted] century.

24RA512

Also about 15 miles south of the others are about 200 yards west of Cape Creek, 24RA, on a steep slope overlooking the flat west of Cape Creek. In the process of digging a proposed root cellar, the landowner found a stick bottle, and beneath the roots of a large tree, a yellow paper knife. Further tests revealed no more cultural material.

4RA513 Medicine Tree SE 4-0 135 100 22 72

known as Bitter Medicine, get the name from the Tree.
Large ponderosa pine stands on the west side of the
the Bitterroot River. This name is, however, from the Indians.
has several legends to explain its origin.

However, it is not the intent of the report to state the fact
appears to be that the subject was not at the camp.

Fig. 25. Scarred tree at 24RA511.

Fig. 25. Scarred tree at 24RA511.

(Thwaites 1804-1806:63). White also has observed the same phenomena along the Salmon River in Idaho, south of Sula, Montana.

Fredlund and Fredlund, (1971), by taking core samples, dated scars in the Three Forks of the Flathead River area as occurring within the past 150 years. On large tree at 24RA511, dated by the Forest Service, was stripped in the 18th Century.

24RA512 Root Cellar Site: SW $\frac{1}{4}$ of NE $\frac{1}{4}$ of Sec. 9, T1N R21E

Also about two miles south of Sula, Montana and about 200 yards west of Camp Creek, 24RA512 lies on a north facing slope overlooking the flat west of Camp Creek. In the process of digging a proposed root cellar, the land owners found a stone pestle, and beneath the roots of a large ponderosa, a yellow jasper knife. Further tests revealed no more cultural material.

24RA513 Medicine Tree: SE $\frac{1}{4}$ of NW $\frac{1}{4}$ of Sec. 22, T2N R20W

Known as either the Medicine Tree or the Ram's Horn Tree, a large ponderosa pine stands on the east bank of the East Fork of the Bitterroot River. This monument, sacred to the Flathead Indians, has several legends to explain its origin (Weisel 1965).

However, the first written account of the legend and the fact appears in a journal of the fur trader, Alexander Ross, who camped near a similar tree somewhere in this vicinity in March, 1824.

In no place of our trip, Hell's Gates itself scarcely excepted, did we meet such a gloomy and suspicious place.

At every bend of the river, wild and romantic scenes opened to view; the river alone preventing the hill and cliffs from embracing each other. We had to cross and re-cross twelve times in half as many miles, until we reached a rocky and slippery path on its margin, where grew a few pine trees, through which the narrow and intricate path led.

Out of one of the trees just mentioned, and about five feet from the ground, growing up with the tree a ram's head, with the horns attached to it; and so fixed and embedded in the bark, that it must have grown up with it; almost the whole of the horns, and more than half the head is buried in the bark, but part of the other horn, and part of the head project out at least a foot. We examined both, and found the head scarcely two feet in diameter. Here we sat up to an hour, and called the place the Medicine Tree.

One of the Indians related the following strange story of the ram's head. He said that one of the mountain Indians, who had been this way attacked a mountain lion, and that the lion, being wounded, pursued him, and he sought shelter in a cave. The lion came again, and his force was so great, that he drove his head through the cave. He continued to attack again, the Indian being unable to resist. The lion then went on a moment, and the adventure was all the more celebrated, which was, by the Indians, as a matter of course, conferred on the man who mastered and killed the animal. Hundreds of the Indians passed this way, and something as a tribute to the lion, and the man, the Iroquois, not to mention the Indians of the west, hung a lot of tobacco on the horns of the ram's head. (Ross, 1818-19).

Other legends of the legend of the Medicine Tree are years, but we did not have time to go through the vicinity in detail.

One of the legends of the Medicine Tree is a singular curiosity, that I had not before observed, because it was that of the Medicine Tree, which is almost impassable



Fig. 26. Medicine Tree--24RA513.

At every bend of the river, wild and romantic scenes opened to view; the river alone preventing the hill and cliffs from embracing each other. We had to cross and re-cross twelve times in half as many miles, until we reached a rocky and slippery path on its margin, where grew a few pine trees, through which the narrow and intricate path led.

Out of one of the pines I have just mentioned, and about five feet from the ground, is growing up with the tree a ram's head, with the horns still attached to it; and so fixed and embedded is it in the tree, that it must have grown up with it; almost the whole of one of the horns, and more than half the head is buried in the tree; but most of the other horn, and part of the head protrudes out at least a foot. We examined both, and found the tree scarcely two feet in diameter. Here we put up at an early hour, and called the place Ram's Horn encampment.

Our Flathead Indians related to us the rather strange story about the ram's head. Indian legend relates that one of the first Flathead Indians who passed this way attacked a mountain ram as large and stout as a common horse; that on being wounded, the fierce animal turned round upon his pursuer, who taking shelter behind the tree, the ram came against it with all his force, so that he drove his head through it; but before he could get it extracted again, the Indian killed him, and took off the body, leaving the head as a memento of the adventure. All the Indians reverence the celebrated tree, which they say, by the circumstances related, conferred on them the power of mastering and killing all animals; hundreds, therefore, in passing this way sacrifice something as a tribute to the ram's head; and one of the Iroquois, not to incur the displeasure of the god of hunters, hung a bit of tobacco on the horn to make his hunting propitious (Ross 1855:18-19).

Other accounts of the legend vary in details through the years, but Warren A. Ferris, also a fur trader, passed through the vicinity in 1933 and recorded the phenomenon.

On the east side of the Bitter Root river, there is a singular curiosity, that I had not before observed, because it was situated under some rocky bluffs, almost impassable

to horsemen, the proper road being on the west side of the river; it is the horn of an animal, called by hunters "Bighorn," but denominated by naturalists "Rocky Mountain Sheep"; of a very large size, of which two-thirds of its length from the upper end is entombed in the body of a pine tree, so perfectly solid and firmly, that a heavy blow of an axe did not start it from its place. The tree is unusually large and flourishing, and the horn in it some seven feet above the ground. It appears to be very ancient and is gradually decomposing on the outside, which has assumed a reddish cast. The date of its existence has been lost in the lapse of ages and even tradition is silent as to the origin of its remarkable situation. The oldest Indians can give no other account of it, than it was there precisely as at present, before their father's great grandfathers were born. They seldom pass it without leaving some trifling offering, as beads, shells, or other ornaments--tokens of their superstitious veneration of it. As high as they can reach, the bark of the tree is decorated with their trifles (Phillips 1940:232-233).

The tree was officially recorded as a historical and archaeological site in 1971, at which time a quarter, circa 1966, was found embedded in the bark. Gilbert Lord, long time resident of the area, said that in the past, collectors had dug up beads from around the base of the tree.

24RA514 Sula Peak Pass: NW $\frac{1}{4}$ of NW $\frac{1}{4}$ of Sec. 5, T2N R20W

24RA514 is a low saddle and springs area on Sula Peak, above the East Fork of the Bitterroot River.

Two scarred trees, both ponderosa pine, were observed. The informant for the site found a conical pestle in the area, and one obsidian flake was collected. Two tests, both five feet by five feet, were made to determine if there were a sub-surface cultural-level, which there did not appear to be. The site is also a pass

which affords access to the East Fork of the Bitterroot River to the west, French Basin to the north, and Ross' Hole to the east. Water at this sub-alpine site is available from the small spring. Prior to the construction of a road through the canyon, a large point of rocks about $\frac{1}{4}$ of a mile up the river almost barred passage, and thusly gained the name "Jim Hell Rock". The Sula Peak Pass offered an alternate route of travel by which one could still continue up the East Fork by dropping over into Ross' Hole.

24RA515 Rattlesnake Flat Site: NW $\frac{1}{2}$ of SW $\frac{1}{4}$ of Sec. 1, T2N R20W

Also on the East Fork of the Bitterroot River, this site is just around the rock face and north of 24RA501, both of which are due east of 24RA514. The site is an open meadow about three acres in size. The river cuts the west side, and the east is bounded by a mountain. A resident of the valley, Gilbert Lord, has over 28 projectile points from the site, most of which are corner-notched --both shallow and broadly indented notches. Malouf tested the northern portion and found one basalt point (personal communication fig. 27). Ray Abbott of the Sula District Ranger Station also is in possession of a basalt point (fig. 27) and many jasper and banded chert chips. The site has been fairly extensively collected and further testing proved futile.

24RA516 Hotshot Site: SW 1/4 of NW 1/4 of Sec. 16, T2N R17W

This is an open meadow behind the East Fork Fire Guard Station about 16 miles east of Sula up the East Fork road (fig. 28).

In the early 1920's, a fire destroyed most of the Douglas fir, however, ponderosa pine stands are abundant. Lithics are found on about one and a half acres. They are easily seen in the small irrigation ditches which cross the meadow, although they are also evident on patches of bare earth. A test was made to

Fig. 27. 24RA515--two artifacts from the site.

than six inches. Most of the flakes were barely subsurface and were primarily basalt, ignimbrite and basalt. The surface collection was comprised of the same sorts of materials. At one time a



Fig. 28. 24RA516--Photograph of Hotshot site.

The actual archaeological site lies on both sides of the county road.

The field on the north side of the road has been worked, but the

24RA516 Hotshot Site: SE $\frac{1}{4}$ of NW $\frac{1}{4}$ of Sec. 16, T2N R17W

This is an open meadow behind the East Fork Fire Guard Station about 16 miles east of Sula up the East Fork road (fig. 28).

In the early 1920's, a fire destroyed most of the Douglas fir, however, ponderosa pine stands are abundant. Lithics are found on about one and a half acres. They are most easily seen in the small irrigation ditches which bisect the meadow, although they are also evident on patches of bare earth. A test was made to determine the depth of deposits, which did not extend more than six inches. Most of the flakes were barely subsurface and were primarily basalt, ignimbrite and jasper. The surface collection was comprised of the same sorts of materials. At one time a stone bowl was found on the site, according to Abbott, but its location is no longer known.

24RA517 Sweathouse Site: SE $\frac{1}{4}$ of NW $\frac{1}{4}$ of Sec. 17, T2N R17W

This site is about 12 miles up the East Fork and on a flat just north of the East Fork of the Bitterroot River. It lies on a grassy terrace with a lower marshy area immediately by the river (fig. 29). Fred Wetzsteon, the land owner, said there used to be some Indian sweathouses approximately where the East Fork Road now goes. There are small warm springs in the area, and the water, when it flows into the river during the winter, never freezes. The actual archaeological site lies on both sides of the county road. The field on the north side of the road has been worked, but the



Fig. 29. 24RA517 site photo.



Fig. 30. 24RA517 site photo.

Fig. 31. 24RA518 Stiwelt pictographs, done in red.

portion on the south side of the road has been cleared and grazed, but never turned over, according to Wetzsteon, who also says this terrace was never heavily wooded.

Wetzsteon

them basalt

concial pest

corner notch

points, simi

24RA518 Stir

T2N R20

On the

24RA501, and

side of the

even while d

blocked by a

hang is abou

feet from on

another rock

red masses o

marks, verti

24M01082 Wal



The Walcott is a small, dark, irregular shape, about 10 feet above sea level, up Miller Creek. The Walcott is a small, dark, irregular shape, about 10 feet above sea level, up Miller Creek.

Fig. 31. 24RA518 Stirwalt pictographs, done in red.

portion on the south side of the road has been cleared and grazed, but never turned over, according to Wetzsteon, who also says this terrace was never heavily wooded.

Wetzsteon has collected many artifacts from his field, among them basalt and jasper points, hammerstones, grooved mauls, conical pestles, knives and scrapers. The points range from the corner notched variety to slightly cornernotched, indented base points, similar to the Duncan-Hanna type (Bentzen 1961, Mulloy 1954).

24RA518 Stirwalt Shelter Pictographs: SE $\frac{1}{4}$ of SE $\frac{1}{4}$ of Sec. 34,

T2N R20W

On the East Fork of the Bitterroot, and between 24RA513, 24RA501, and 24RA515, is a small rock overhang, again on the east side of the river. It can not be easily seen from the highway, even while driving north, as the shelter faces south. The view is blocked by growths of chokecherries and ponderosa pine. The overhang is about six feet high and the pictographs extend about 10 feet from one end of the shelter around the eastern corner onto another rock face. Most of the pictographs are indistinguishable red masses of color. Discernable figures include vertical hash marks, vertical wavy lines, and an animal figure (fig. 31).

24M01082 Waldbilling Site: W $\frac{1}{2}$ of S $\frac{1}{2}$ of T11N R19W

The Waldbilling Ranch Site lies 4,000 feet above sea level up Miller Creek in Missoula County. It is about nine miles east

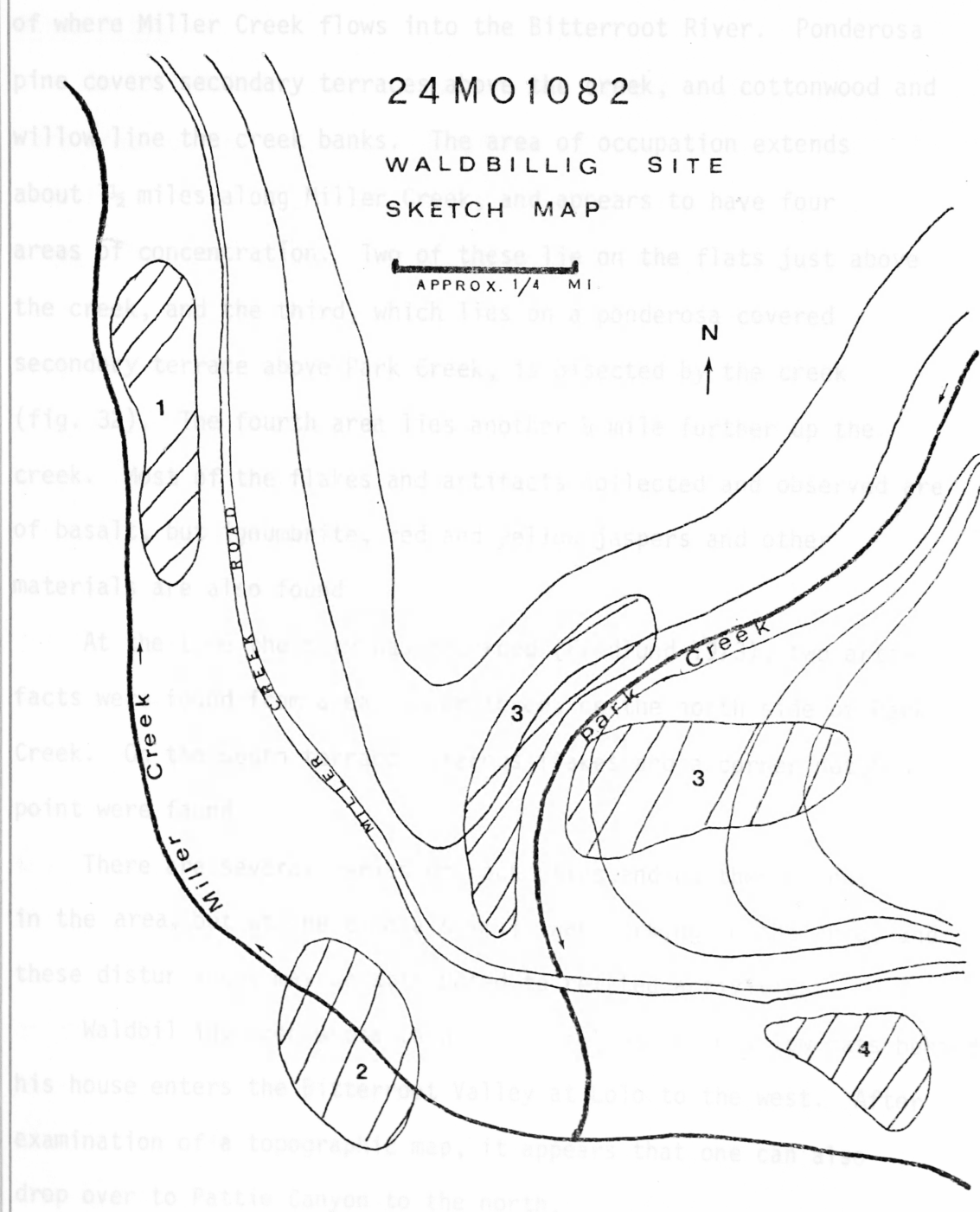


Fig. 32. Map of 24M01082. Sapphires for some distance would be possible.

of where Miller Creek flows into the Bitterroot River. Ponderosa pine covers secondary terraces above the creek, and cottonwood and willow line the creek banks. The area of occupation extends about $1\frac{1}{2}$ miles along Miller Creek, and appears to have four areas of concentration. Two of these lie on the flats just above the creek, and the third, which lies on a ponderosa covered secondary terrace above Park Creek, is bisected by the creek (fig. 32). The fourth area lies another $\frac{1}{4}$ mile further up the creek. Most of the flakes and artifacts collected and observed are of basalt, but ignimbrite, red and yellow jaspers and other materials are also found.

At the time the site was recorded (Fredlund 1973), two artifacts were found from area number three, on the north side of Park Creek. On the south terrace numerous flakes and a corner notched point were found.

There are several series of rock piles and earthen mounds in the area, but at one time a sawmill was working in the area, and these disturbances may be attributed to related activities.

Waldbillig, upon whose land the site lies, said a low pass behind his house enters the Bitterroot Valley at Lolo to the west. After examination of a topographic map, it appears that one can also drop over to Pattie Canyon to the north.

Once altitude is gained on the mountains surround the site, travelling on the long ridges into the Sapphires for some distance would be possible.

Other Sites

In 1951 Malouf found two sites, one at the mouth of Burnt Fork Creek on the Sapphire side of the valley. It had a few jasper and flint chips and was determined to be a small occupation site. The other site, a few miles south of Darby, Montana, was at Lake Como. Before an earth and rock dam was put across the outflow area of two small ponds, in the early 1900's, the area which is covered by present Lake Como was once an important source of camas, according to Ellen Big Sams (Malouf personal communication). The plants were found between the two ponds which formed a large reservoir when the outlet was dammed. At present, occasional lithic material is found near the outlet area and on the shorelines when the lake level is down. One of the horned figures was done in yellow pigment. Drawings of shield bearing warriors at Grinnvold Rockshelter (Conner and Conner 1971) have similar shields, although they lacked the rectangular abdominal region and knobby knees which Mulloy (1958:126) said are common on shield bearing figures. The vertical lines in the shield were thought to be representations of the body through the shield (Conner and Conner 1971:14). Another figure of this type may be the lower left figure from 24RA505 (fig. 13). It had a definite neck and may be phallic. It also had a headress of either a horn or a feather.

CHAPTER V

ROCK ART

To discuss the rock art of the Bitterroot area in some sort of orderly fashion, a set of classes which covered the range of pictographs found in the valley was used. Some of the categories were borrowed from Conner and Conner (1971) and are so designated.

I. Anthropomorphic Figures

A. Shield Bearing

1. Typical Plains

2. Rectangular Bodied

B. Solidly Colored Figures

1. Full View

2. Solidly Colored Side View Humans

(Conner and Conner 1971)

C. Female Figures

II. Animals

A. Canine

B. Elk or Deer

C. Snakes

D. Bison

E. Amorphic Animals

III. Inanimate Subjects of Rock Art (Conner and Conner 1971)

A. Counter Lines

To compare the rock art of the Bitterroot Valley with other areas was difficult as not all the categories have more than one representative. Also, as Conner and Conner mentioned (1971:14), each occurrence of a pictograph or petroglyph has its own individuality, even within the type.

Anthropomorphic Figures

Shield bearing warriors. Two distinct types of shield bearing figures have thus far been discovered in the Bitterroot Valley.

The first of these was like that typically found on the Plains.

The more prominent elements in the category locally (Note: Central Montana) seem to be a circular design presumed to be a shield above which a person's head and sometimes a neck, appear. Legs and feet are shown except in rare instances. One of the more distinctive design elements of this art type is the lanceolate object resembling a coup stick that nearly always protrudes outward diagonally from the shield at ten O'clock or two O'clock. There are often feather like objects which hang from the end of the lanceolate design. Many of the shield bearers have headdresses with horns resembling bison horns (Conner and Conner 1971:14).

24RA501 had two figures which fit this description (fig. 3).

The second type of shield bearing human found in the valley had a rectangular abdomen, which was both outlined and solidly colored in red (fig. 19). Seven of the figures from 24RA506 fell into this category, and two of them had headdresses with horns (fig. 20),

Some of the figures at 24RA506 had hanging projections in the upper and lower rectangles, which may represent internal organs.

Solidly Colored Figures (Conner and Conner 1971), full view figures were found in four sites, 24RA501, 24RA506, 24RA505, and 24RA504. Those at 24RA506 (fig. 19) had upraised arms, which were similar to those reported by Napton (1966) and which Conner and Conner (1971:37) suspected as being of Shoshoni origin. A similar figure appeared at 24RA504 (fig. 10), although in this case, it wears a headress of horns and lacked the lower half of the body. At 24RA501 (figs. 4-5) the figure's arms were oriented downward.

Solidly colored side view human figures appeared at only one site, 24RA505 (fig. 12). The figure was involved in some action, as it held a club or a coup stick in an upraised arm, and the other arm protruded from the body at a 45° angle. It was also phallic.

Female Figures. Only one female figure was found, at 24RA505 (fig. 12). That it is a woman was confirmed by pendulous breasts seen in full view and pronounced buttocks, seen from the side. It also appeared to have on a long skirt, or dress. At this time, no comparable sources are known.

Animals

Canine. Canine figures were represented at two sites, 24RA504 and 24RA505. The latter panel (fig. 12) had two animals which

may be coyotes, wolves, or dogs, although they were not identical. 24RA504 had one canine animal (fig. 10) which was also phallic. Secrist (1960:13) reported a canine figure from Atherton Canyon in Fergus County, Montana.

Elk or Deer. Elk or deer in pictograph or petroglyph panels are known in nine sites in Central Montana (Conner and Conner 1971:25), including Pictograph Cave (Mulloy 1958:134). One site in the Bitterroot Valley had a quadrupedal animal which had no tail and antlers which curve forward (fig. 7). It could have been meant to represent a white tail deer.

Snakes. 24RA518 (fig. 31) and 24RA504 (fig. 9) had motifs which may be meant to represent snakes. Snakes were shown as red pictographs at Atherton Canyon (Conner and Conner 1971:32), and Nevada sites also depicted them (Heizer and Baumhoff 1962).

Bison. One site in the Bitterroot showed two quadrupeds which, although almost completely weathered away, were bison (24RA502, fig. 6). According to Conner and Conner (1971:24) few drawings of bison have been discovered. Known finds are in Teton Jackson Cave in the Pryor Mountains (Nelson 1942:264), Pictograph Cave (Mulloy 1958:132), Castle Butte, Hagerman Butte, Flagstaff Pictographs and Judith Pictographs (Conner and Conner 1971:24). Conner and Conner (1971) also mentioned that it is strange that the bison, a very important game animal for the Plains peoples, rarely shows up in the rock art. Nesbitt (1968:13) reported bison pictographs

in the Lower Snake River Region, although they were not like those at 24RA502. Those at the latter site more closely resembled Nelson's find (1942:264).

Amorphic Animals. In the panel at 24RA503 (fig. 6) are two figures whose shapes were not quite discernable. They appeared to be some sort of animal. The rock face was slightly weathered, but it appeared that the amorphic shape was intentional.

Inanimate Subjects of Rock Art

Counter Lines. Counter lines consist of horizontal rows of vertical marks, in any number. Counter lines, or "hash marks", appear in conjunction with other forms, such as animals or human figures, or they can appear by themselves in pictograph panels. At 24RA501 (fig. 5) they appeared with anthropomorphic figures and in concentrations of nothing but counter lines. At 24RA503 (fig. 7) they were found in association with a deer or elk and two amorphous figures.

Conner and Conner (1971) stated that the lines were used to demarcate the passage of time someone spent at a particular place. (Malouf 1961) (Personal Communication) said that Kutenai informants told of using them to demonstrate how long they stayed at a particular place. Counter lines appear in rock art sites throughout the Northwestern Plains, and they are not restricted to a pictographic expression. They appear in south-central Montana in petroglyph panels (rock carvings) (Loendorf 1969 unpublished field report).

Interpretations

Motifs generally associated with the Plains appear in the valley. Shield bearing human figures are definitely in evidence. Mulloy (1958:121) placed their usual appearance on the eastern slope of the Rockies. Because they are the most durable of all motifs on the Plains (Conner and Conner 1971), it is not possible to absolutely date their presence in the Bitterroot. However, several suggestions can be made. One set of the shield bearing figures, those from 24RA501 (fig. 3), have large shields and thus probably indicate pre-equestrian rock art. This type is also found in the Great Basin, associated with the Fremont Culture (Secrist 1960). Although the figures at 24RA501 are colored solidly, they resemble those found at Pictograph Cave in form, which Mulloy (1958) dated about A.D. 1,000. There is no reason to believe those in the Bitterroot could not also date from this approximate time.

The shield-bearing figures at 24RA506 show only $\frac{1}{2}$ of the body covered by the shield. If the decrease in size of shields is related to the functions, then this panel could have been drawn after people with horses entered the valley. Although the ethnic group can not be identified, the time was probably after 1730 (Haines 1938).

Animal figures, all done in solid colors, indicate that some people, either residing in or passing through the valley, hunted deer and bison. Whether or not the bison hunters lived in the

valley or were passing through to the Big Hole Country and the Plains to the east of the Rockies, or to the Snake River Plain is a moot question. Bison were also hunted on the Snake River Plain (Teit 1930), (Butler 1971, Unpublished Manuscript), and so this possibility must be considered. Teit (1930) Turney-High (1932) and Lowie (1909), among others, all mention the Flathead, Pend d' Oreille and Plateau peoples regularly trekking across the Rockies to hunt bison on the Plains. Another possibility for the appearance of the animal figures is that they were drawn in connection with puberty rites (Malouf 1961). Malouf (1961:8-9) stated:

In brief it may be said they were mostly made by young people immediately after they had made a successful vision quest. Young people were encouraged by their elders to seek or acquire spiritual help to cope with the vicissitudes of life. There were several ways a guardian spirit, and spiritual powers could be acquired to make them a better hunter, a more successful hunter, a more efficient lover, or a man who could make cures for the sick and ill. One way a power could be obtained was to seek a spiritual visitor at a pictograph panel. We cannot say how these panels would first begin, but over the years as more and more persons stopped at them they grew in size or numbers. Each new recipient, after remaining several days, drew his name in pictographic form, or their newly acquired guardian spirit was sketched. The numerous short, single lines so characteristic of these panels, or several small circles denoted the number of days the suppliant remained at the site before his spiritual visitor arrived at the scene. The panels do not tell histories of tribes, or hunting parties, as some have supposed.

The possibility of the Bitterroot Valley rock art showing past vision locales is valid. However, I thought it possible that the animal scenes without counters represented the hope for hunting magic, as was the case in the cave art of Paleolithic Europe.

Several figures, primarily solidly colored human figures (figs. 4, 5, 10, 19) were similar to some thought to be the work of the Shoshoni (Conner and Conner 1971). This is plausible, because the Northern Shoshoni used to range into what is now Idaho. On the other hand, Malouf (1961) thought they were Salish in origin. He felt (Malouf 1967:13-15, 1968:6) that the Shoshonean bands moved into Montana and Wyoming from the Basin in the early 1700's.

Malouf (1961) devised a system for classifying Montana rock art. His type I could describe some of the forms found in the valley.

.1. The simplest styles were fairly realistic. They were solidly painted on rock surfaces, and were not in outline form. Figures consisted primarily of animals, such as mountain sheep, elk, deer, bear and wolf. Human figures were scarce, and when arms and hands were portrayed on them three fingers were common. Bison figures were virtually absent among the illustrations. Painted figures were almost exclusively in red pigments. Lines, evidently denoting numbers, and circles, wavy lines, concentric circles, and hand prints were also common among the drawings.

Because historic items are not associated with them, Malouf suggested that Type I may be about 2,000 years old.

In association with the shield figures were solidly colored human figures which could fit into Malouf's Type I. In fact, one figure with the large-shield figures at 24RA501 had three fingers. Because Mulloy (1958) dated the large shield figures at Pictograph Cave at about A.D. 1,000, and Malouf's Type I is dated at about A.D. 2,000, the entire panel at 24RA501 probably was drawn sometime before A.D.0. The solidly colored figures at 24RA506 were

strategically placed at each end of the panel and probably lend some meaning to the entire panel. For this reason, I think they were drawn when the other figures were. Because the shields are smaller, and the figures tend to have a more outlined appearance, rather than solidly colored, they were drawn later than those at 24RA501. Also, one figure is completely done with yellow pigment, which is a marker of later techniques (Malouf 1961).

It is very difficult to associate pictographs with specific ethnic groups. However, that some of the rock art is of Shoshoni origin is certainly possible. Counter lines appear to be a standard motif throughout the western United States. The shield-bearing figures indicate some Plains influences, although they are found from the Milk River in Canada to the Great Basin.

All the pictograph sites are located in the extreme southern portion of the valley, near passes into Idaho and the Big Hole Country. The most northern rock art sites are on Skalkaho Creek, which is a route to the east side of the Sapphire Mountain range, by way of Skalkaho Pass.

Other pictograph panels found in western Montana have some motifs similar to those in the Bitterroot. For example, Taylor (1973) reported some from northwestern Montana, also solidly colored, which resemble some of those from the Bitterroot. They fit within Type I of Malouf's scheme (1961).

CHAPTER VI

ARTIFACT ANALYSIS

Although many artifacts were observed in private collections throughout the valley, not a great many were found in the course of the survey. Because of this, a typology will not be constructed. Instead, each artifact is described, with relation to the observed collections and comparative specimens in the literature. Major artifact groupings are chipped stone, ground stone, bone and shell.

Chipped Stone

Chipped stone includes projectile points, scrapers, knives, and drills. Measurements are taken for maximum length from the base to the tip, and for points, the widest portion across the shoulders was measured.

Projectile Points

item:	figure 33a
material:	chert
size:	length 2.3 cm., width 1.8 cm., thickness .6 cm.
provenience:	24RA506, 2"3" B.D.
description:	The specimen is corner notched with a straight stem and slightly convex base. The flake scars do not carry across. The tip and one corner are missing.

- comparisons: Swanson, Butler, and Bonnicksen, 1964, Birch Creek, Idaho.
Jenning, 1957 Danger Cave, Utah
Mulloy, 1958 Pictograph Cave, Montana
Malouf 1956, Flathead Lake, Montana
- item: figure 33f
material: yellow jasper
size: length 2.0 cm., width 1.5 cm., thickness .4 cm.
provenience: 24RA506, 2'3" B.D.
- description: The specimen is corner-notched and has a broken tip. The base is slightly concave, although it could be described as straight.
- comparisons: Swanson, Butler and Bonnicksen 1964, Birch Creek Idaho
Jennings 1957, Danger Cave, Utah
Mulloy 1958, Pictograph Cave, Montana
Malouf 1956, Flathead Lake, Montana
- item: figure 33g
material: grey chert
size: length 2.2 cm., width 1.3 cm., thickness 15 cm.
provenience: 24RA605, 2'7" B.D.
- description: The specimen is side notched and has a slightly convex base which is wider than the shoulders.
- comparisons: Swanson, Butler and Bonnicksen 1964, Birch Creek Idaho
Mulloy 1958, Pictograph Cave, Montana
- item: figure 33i
material: basalt
size: length 2.5 cm., width 2.0 cm., thickness 4 cm.
provenience: 24RA506, 2'7" B.D.
- description: Although the specimen lacks the tip and most of the base, it appears to be corner-notched. The notches are more sharply oriented downward than the two earlier corner-notched specimens from the same site. The edges have both pressure flake scars and longer transverse scars.

- comparisons: Butler 1968, review of Idaho archaeology
Swanson, Butler and Bonnicksen 1964 Birch Creek,
Idaho
Mulloy 1958, Pictograph Cave, Montana
Malouf 1956, Flathead Lake Montana
- item: figure 33j
material: yellow jasper
size: length 2.8 cm., width 2.2 cm., thickness .4 cm.
provenience: 24RA506, 2'9" B.D.
- description: This specimen lacks a base; otherwise it is complete. The transverse flaking, which appears on both sides, is skillfully done. It appears to be corner notched.
- comparisons: Without the base, the projectile point can not be accurately compared with others in the literature.
- item: figure 33h
material: yellow jasper
size: length unknown, width 2.2 cm., thickness .3 cm.
provenience: 24RA516 surface
- description: The specimen consists of the base, one shoulder and notch of a projectile point. The shoulders apparently extend further outward than does the base. The latter is straight to slightly convex.
- comparisons: No comparisons have been observed in the literature.
- item: figure 33k
material: yellow jasper
size: length unknown, width 1.6 cm., thickness .3 cm.
provenience: 24RA605, 2'9" B.D.
- description: This specimen is the triangular blade of a projectile point which has fine transverse flaking on both sides.
- comparisons: Without the base, the projectile point can not be accurately compared with others in the literature.

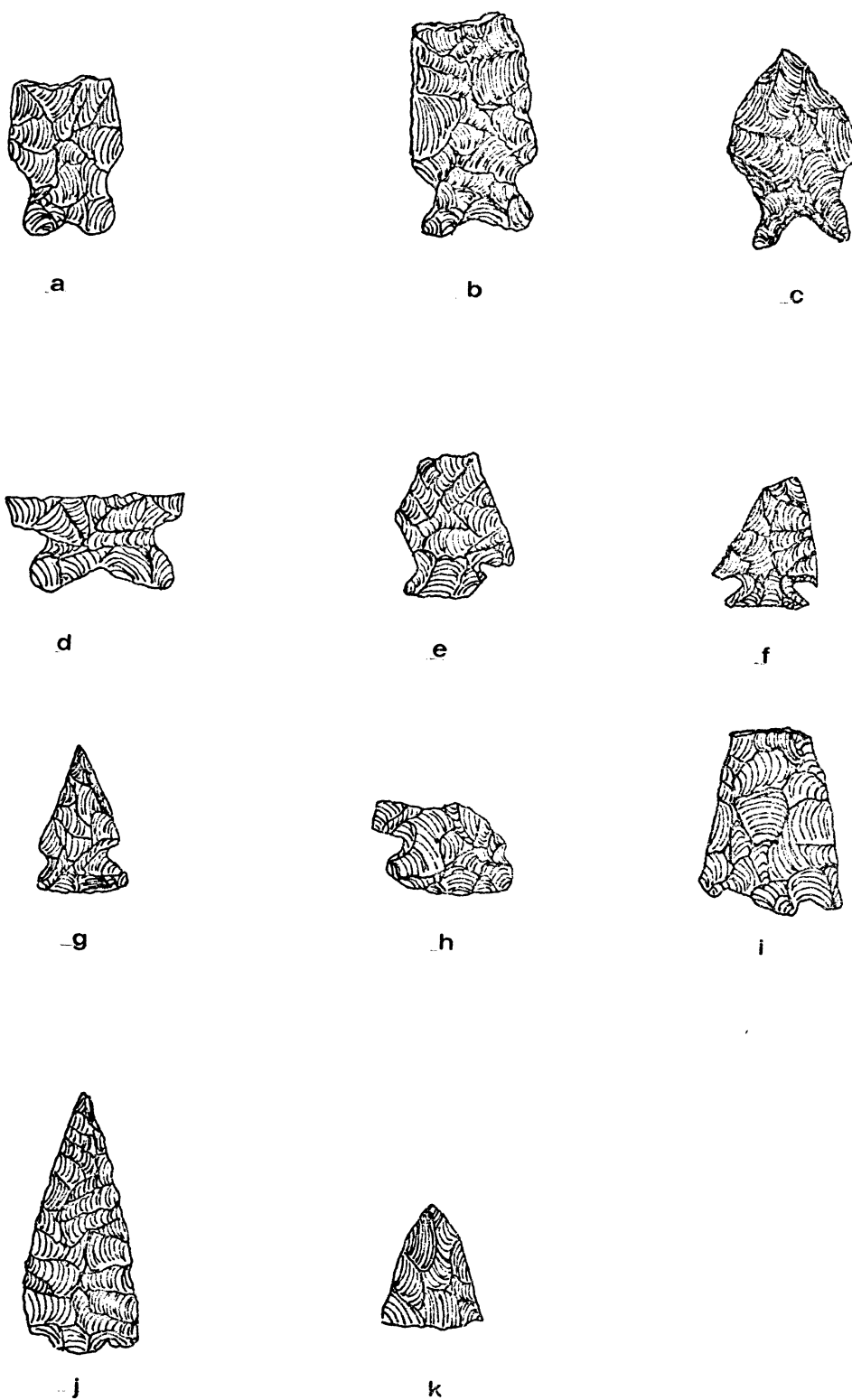


Fig. 33. Projectile points from sites, collections.

item: figure 33b
 material: basalt
 size: length 4 cm., width 1.8 cm., thickness .6 cm.
 provenience: 24M01082 surface
 description: The specimen lacks the tip. The base is concave with a u-shaped indentation. The shoulders are almost parallel. It has pressure flaking on the edges.
 comparisons: Loendorf 1968 Pryor Mountain Report Type II, Montana
 Bentzen 1961 Powers Yankee Bison Trap, Montana
 Mulloy 1958 Pictograph Cave, Montana
 Taylor 1964 Type VIII Yellowstone Park
 Malout 1956 Flathead Lake, Montana

item: figure 33c
 material: ignimbrite
 size: length 2.9 cm., width 2 cm., thickness .5 cm.
 provenience: 24M01082 surface
 description: The specimen is shallow notched with small shoulders which immediately converge to a point. The base is concave, and each corner of the base forms an "ear".
 comparisons: Bentzen 1962 Powers Yankee Bison Trap, Montana
 Loendorf 1968 Field Report Type II, Montana
 Mulloy 1958 Pictograph Cave, Montana
 Taylor 1964 Yellowstone Park Type IX

Knives

Several of the following specimens, although they resemble projectile points, are thought to be knives due to some abnormality, such as asymmetry or excessive thickness.

item: figure 34a
 material: basalt
 size: length 3.1 cm., width 2 cm., thickness .5 cm.
 provenience: 24M01082 surface

- description: The specimen has a single notch with a convex base. Large transvers flake scars cover the surface on each side.
- comparisons: Few similar specimens have been observed. One was seen in the McHaffie collection, also in association with McKean-Duncan-Hanna types.
- item: figure 34b
 material: poor quality chert
 size: length 5.2 cm., width 2.5 cm., thickness 1.8 cm.
 provenience: 24RA506, 4'3" B.D.
- description: The specimen is complete except for one broken "ear". The base is concave, and the corner notches develop into triangular shoulders. Its obvious asymmetry and thickness probably indicates useage as a blade or knife. However, the all over conformation allows some comparisons to be made.
- comparisons: Aikens 1970 Hogup Cave, Utah
 Swanson Butler and Bonnicksen 1964 Birch Creek, Idaho
 Bentzen 1962 Powers Yonkee Bison Trap, Montana
 Loendorf 1968 Field Report, Pryor Mtns., Montana
- item: figure 34c
 material: red jasper
 size: length 4 cm., width 2.4 cm., thickness .5 cm.
 provenience: 24M01082 surface
- description: The specimen lacks the tip which should make it at least 1 cm. longer. It has transverse flakes on both sides, which extend to the middle from either side. It is stemmed with corner notches. The base is slightly concave.
- comparisons: Bentzen 1962 Powers Yonkee, Montana
 Mulloy 1958 Pictograph Cave II, Montana
 24RA506 fig. 34b
- collections: Gilbert Lord, Sula, Montana 24RA515 (fig. 27).
 Ray Abbott, Sula, Montana 24RA515 (fig. 27).

item: figure none
 material: poor quality chert
 size: length unknown, width 4.2 cm., thickness 1.1 cm.
 proveniences: 24RA506, 4'3" B.D.
 description: The specimen is a broken knife, possibly originally ovoid, with large flakes removed bifacially.

item: figure 34d
 material: basalt
 size: length 12 cm., width 4.7 cm., thickness 1.7 cm.
 provenience: 24M01082 surface
 description: The specimen is unifacially flaked along the working edge, although the butt end also shows some retouch

item: figure 34e
 material: basalt
 size: length 9.8 cm., width 5.7 cm., thickness 1.5 cm.
 provenience: 24RA510
 description: The specimen is unifacially flaked along the curved working edge. It shows some use retouch.

comparisons: Malouf (personal communication) observed similar knives being manufactured by the Flathead.

item: figure 35a
 material: yellow jasper
 size: length 8.6 cm., width 2.7 cm., thickness .9 cm.
 provenience: 24RA510
 description: The specimen is broader at one end, which also shows retouch in a curved notch. The adjacent side has been pressure flaked along its length. The conformation at the top suggests it is a burin or graver, and the side reworking suggests it may also serve as a knife or scraper.

item: figure none
 material: red jasper
 size: length 2.5 cm., width 1.3 cm., thickness .9 cm.
 provenience: 24RA506, 2'7" B.D.
 description: The specimen is not complete. It is a fragment of a bifacially flaked knife.

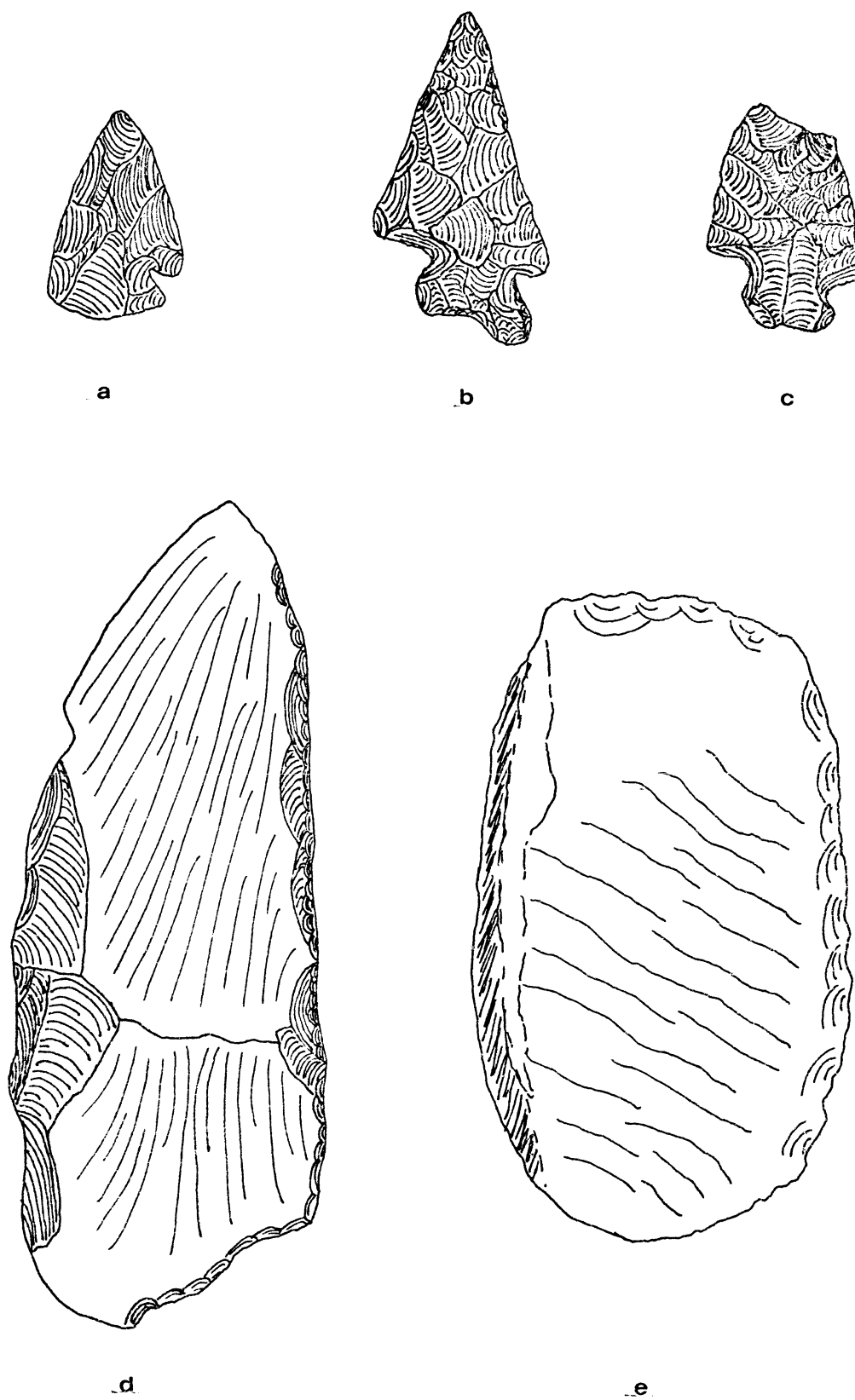
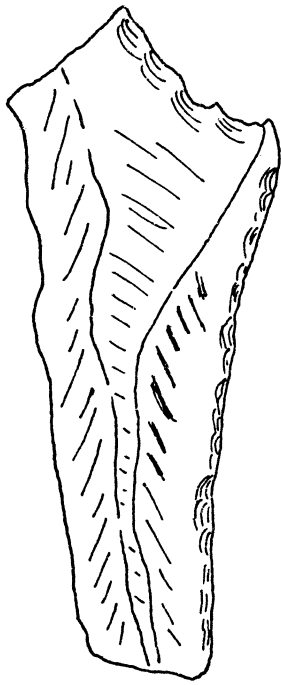


Fig. 34. Knives from sites, collections.

Scrapers

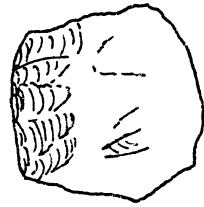
- item: figure 35b
 material: red jasper
 size: length 1.9 cm., width 1.9 cm., thickness 1.6 cm.
 provenience: 24RA506 3'6" B.D.
 description: The specimen is a small thumbnail type side and end scraper. It also appears to have use retouch on the worked edges.
- item: figure 35c
 material: agate
 size: length 2.5 cm., width 2.3 cm., thickness 1 cm.
 provenience: 24RA517 surface
 description: The specimen is not complete, and the material is also highly fractured. It has unifacial retouch on one side.
- item: 35d
 material: yellow jasper
 size: length 5 cm., width 2.5 cm., thickness .4 cm.
 provenience: 24RA506 2'7" B.D.
 description: The specimen is slightly rectangular in shape, and has flaking on the end and one side. It probably is an end and side scraper.
- item: figure 35e
 material: basalt
 size: length 1.7 cm., width 1.5 cm., thickness .8 cm.
 provenience: 24RA506 2'7" B.D.
 description: The specimen is piriform in shape and has retouch on the broadest end.
- item: figure 35f
 material: chert
 size: length 1.5 cm., width 2 cm., thickness .5 cm.
 provenience: 24RA506 2'7" B.D.
 description: The specimen is piriform in shape, but the retouch is on a side.



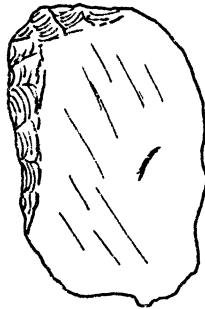
a



b



c



d



e



f

Fig. 35. Graver, scrapers.

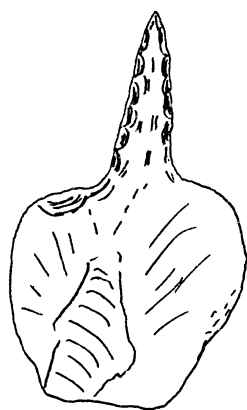
**a****b**

Fig. 36. Flint awls.

Awls

The following specimens were thought to be awls, which were tools used to perforate material such as leather. Awls were formed from either stone, as described below, or from bone, described in the section on bone artifacts.

item: figure 36a
 material: banded chert
 size: length 5.4 cm., width 3 cm., thickness 1 cm.
 provenience: 24RA510

description: The specimen is broad and globular at the base and rapidly thins to a round point, which has been flaked around its whole circumference. It was probably used as an awl of drill.

item: figure 36b
 material: red jasper
 size: length unknown, width 1.6 cm., thickness 1.6 cm.
 provenience: 24RA516 surface

description: The specimen is incomplete. The sides converge toward the broken end. The entire surface is flaked. It is probably part of a drill or awl.

Ground Stone

This category includes artifacts which have been pecked, abraded and shaped into the preferred form. Although no ground stone artifacts were found during the survey, a significant number were observed from various sites and collections in the valley. Artifact types in the category are pestles, mauls, edge-ground cobbles, celts and pipes.



Fig. 37. Conical pestle.

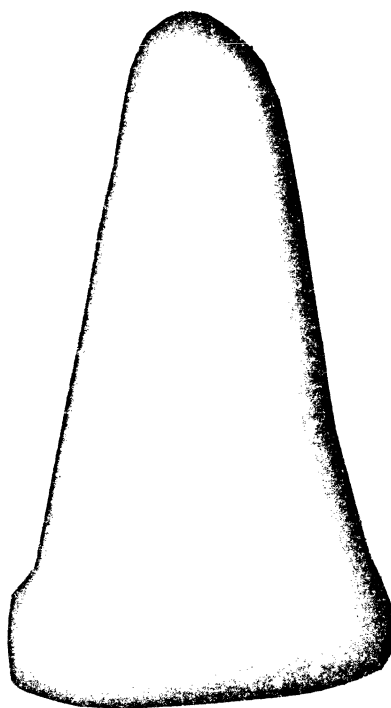


Fig. 38. Pestle from Miller Creek.

Pestles

Pestles are usually long tapering stones with one end slightly flattened from pounding and grinding at the broader end. They were used for pulverizing and crushing seeds and berries. Malouf (1962b) said that they were used against a stationary flat rock rather than against a mortar or wooden bowl. The Salish and Kutenai used them for pounding berries and mixtures (Malouf 1962a:11).

Pestles were observed in collections from 24RA512, 24RA514, 24RA517 and 24M01082. All are shaped from granite or basalt. The first three are from 13 cm. to 17 cm. in length and are characteristically broader at one end (fig. 37). The ends, which are pecked and roughened, were probably the work surfaces. Malouf (1962b) describes this type as concical, and relates its origin from further west somewhere in the Late Prehistoric, as they appear on Level II at Flathead Lake.

Another type of pestle was observed from an area not far from 24M01082. This pestle (fig. 38), made of granite, is characterized by a broad rim which encircles the base. Similar pestles are reported from the Plateau (Warren 1968:88). Malouf (1962b) describes this type as the "potato masher" type, and believes it is a later Columbia trait than the conical pestle, because the Flathead and the Pend d' Oreille have been ethnographically using it.

Edge-ground cobbles

Often elongated igneous or metamorphic rocks are found with one or two edges flattened and smoothed. These are described in the literature as edge-ground cobbles (Loendorf 1969). They were probably used for either tanning hides or for grinding seeds or berries against a hard surface.

One edge-ground cobble was observed in the collection from 24RA509. The specimen, about 13 cm. in length, is made of granite (fig. 21). Although one end has been slightly battered, one edge is flat and smooth from rubbing. The specimen is broken into two pieces. Loendorf (1969:229-230) stated that grinding probably cannot account for broken edge-ground cobbles. Instead, he suggested that they were broken when used as pestles. All edge-ground cobbles mentioned in his report have battering on the ends.

Stone mauls

Taylor (1973:102) said

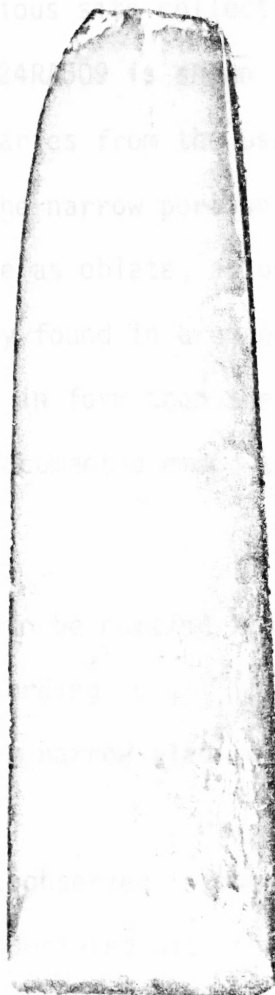
Mauls were made from heavy pebbles and were partially shaped by pecking and abrasion. The pebbles are hard igneous or metamorphic rocks, e.g., granite. Pecked grooves (20 to 27 mm. wide, 3 to 5 mm. deep) completely encircle the tools slightly over halfway up from the striking surface. Weights of the mauls vary up to 3 pounds. These implements were used for pounding, crushing, and pulverizing foodstuffs, perhaps occasionally as weapons and to dispatch wounded animals.

Malouf (1962a) said that east of the Continental Divide, mauls were used to pound meat and marrow or meat and berries together. West of the divide, they were used only for pounding meat. Several mauls were observed in various collections, 24MO1082, 24RA509, and 24RA515. A maul from 24RA509 is shown in Figure 21. It is 12.5 cm. in diameter and varies from the usual type, in that the groove fully encompasses the narrow portion of the cobble. Malouf (1962a) described this type as oblate, compared to elongated forms. The latter, usually found in archaeological collections, was considered to be older in form than the oblate, which Malouf said is ethnographic. It is thought to come from the Gila and Klamath.

Celts

Celts are usually thought to be classified as weapons, and probably indicate woodworking. For example, see Hudson, and Ford (1942:70), who have a list of harrow, etc. and one end ground to a sharp and straight edge.

The sole of a celt is shown in Figure 39. It was accidentally found by workers at the site of 24RA510. It is 16.5 cm. in length and is made of green stone. It is highly polished and has a groove the length of one side. It tapers. Fig. 39. Celt from 24RA510. Made of green stone, it is 6 1/2 inches long. Collier, Hudson, and Ford (1942) described similar finds on the Upper Columbia. The celt, which is green, had been shaped from a larger piece of material. Collier, et al. (1942:71-72).



Malouf (1962a) said that east of the Continental Divide, mauls were used to pound meat and marrow or meat and berries together. West of the divide, they were used only for pounding meat. Several mauls were observed in various site collections, 24M01082, 24RA509, and 24RA515. A maul from 24RA509 is shown in Figure 21. It is 12.5 cm. in diameter and varies from the usual type, in that the groove fully encompasses the narrow portion of the cobble. Malouf (1962a) described this type as oblate, as opposed to elongated forms. The latter, usually found in archaeological collections, was considered to be older in form than the oblate, which Malouf said is ethnographically documented among the Salish and Kutenai.

Celts

Celts are considered to be cutting implements, and probably indicate woodworking. According to Collier, Hudson, and Ford (1942:70), celts had a long narrow blade with one end ground to a sharp and straight edge.

The sole adze or celt observed in the valley was accidentally found by workmen and is associated with the burial at 24RA510. It is 16.5 cm. in length and is 5 cm. wide at the beveled end (fig. 39). It is highly polished and has a groove the length of one side. It tapers to a beveled point at one end. The butt is rounded and smooth. Collier, Hudson, and Ford (1942:70-72) reported similar finds on the Upper Columbia. The celt, which is green, had been shaped from a larger piece of material. Collier, et al. (1942:71-72)

explained how similar objects are manufactured by the Thompson Indians.

This chisel, as well as a number of the celts, shows remains of the grooves made in cutting out the implement. The method was to cut grooves from both sides until a core about $\frac{1}{4}$ inch thick remained between the grooves, and then to break the core. In some cases the broken core has been polished smooth or obliterated; in some others it has been left rough. According to Teit, the Thompson Indians cut the grooves with grit stone or beaver teeth, and according to Smith, the grooves were started with horsetail rush, continued with beaver teeth, and finished with quartz or sandstone, with or without the use of sand as an abrasive.

The material, which is probably serpentine, is available in the Thompson and Fraser River area, according to Collier, Hudson and Ford (1942:72).

This article is significant in that also associated with the burial was a portion of a beaver or muskrat tooth.

Pipes

The Davenport collection from 24RA509 had one pipe of brown material. It is 6 cm. square and has two $\frac{3}{4}$ inch diameter holes drilled in two adjoining sides, which converge in the interior center (fig. 21). Seventeen small dots incised on one side, and there is a groove on either side of the stem. Smith (1910:113) and Spinden (1908) mentioned a similar type of pipe which they found or associated with the Yakima Valley and the Nez Perce', respectively. They referred to the type as "disk shaped", and although its interior form was like that at 24RA509, it lacked a ventral stem.

Spinden (1908) said that such a type of pipe would have a wooden stem inserted in the mouth hole, otherwise the heat would make it impossible to smoke. Those reported by Smith (1910:113) had incised designs on the sides and were documented in use by Snake River Indians.

White (Unpublished Manuscript) stated that the Kutenai in western Montana used this type of pipe in the last century. It probably was a variation of the elbow pipe, which arrived from the east. A small projection usually appeared below the bowl, and was used to prevent burning the fingers. The Kutenai obtained much of their material from a quarry near Phillipsburg. The darkened color was due to treatment in smoke and fire.

Bone

The bone remains found in the valley can be further divided into two separate classes, worked bone and faunal remains, both animal and human.

Worked bone

item:	figure 40a
material:	bone
type:	awl
size:	length 23 cm. width 3 cm. at base
provenience:	24RA510 2'6" B.D.
description:	The specimen tapers to a point and is well polished. It has diagonal striations which continue around its circumference. It is probably a scapula awl.

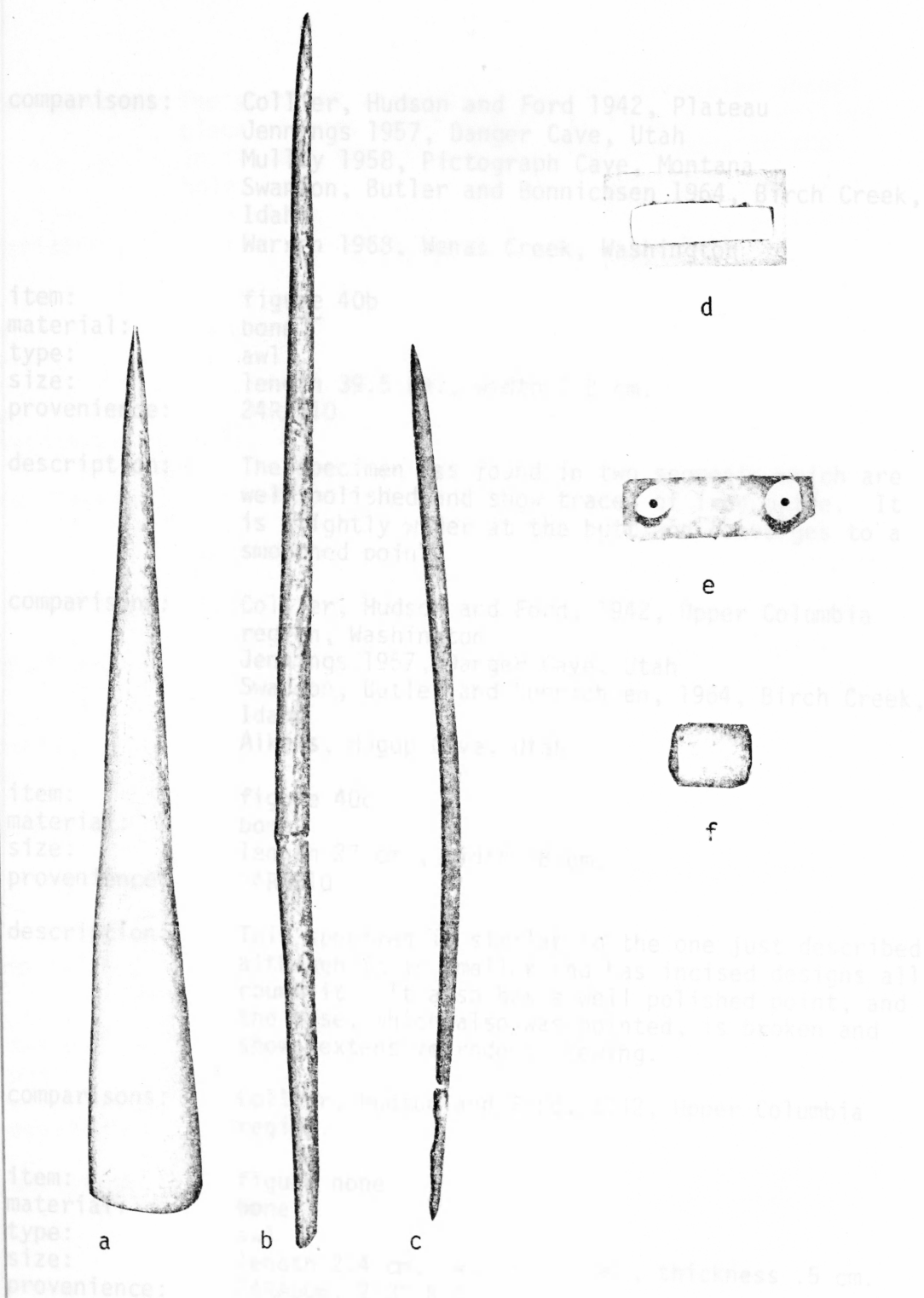


Fig. 40. Worked bone. a). scapula awl, b). long bone object, c). incised, double pointed bone object, d). rodent tooth, e). sesmoidal beads, f). bird bone bead. For size see physical description of each object.

comparisons: Collier, Hudson and Ford 1942, Plateau
Jennings 1957, Danger Cave, Utah
Mulloy 1958, Pictograph Cave, Montana
Swanson, Butler and Bonnicksen 1964, Birch Creek,
Idaho
Warren 1968, Wenas Creek, Washington

item: figure 40b
material: bone
type: awl
size: length 39.5 cm., width 1.2 cm.
provenience: 24RA510

description: The specimen was found in two segments which are well polished and show traces of iron oxide. It is slightly wider at the butt and converges to a smoothed point.

comparisons: Collier, Hudson and Ford, 1942, Upper Columbia region, Washington
Jennings 1957, Danger Cave, Utah
Swanson, Butler and Bonnicksen, 1964, Birch Creek, Idaho
Aikens, Hogup Cave, Utah

item: figure 40c
material: bone
size: length 27 cm., width .8 cm.
provenience: 24RA510

description: This specimen is similar to the one just described, although it is smaller and has incised designs all round it. It also has a well polished point, and the base, which also was pointed, is broken and shows extensive rodent chewing.

comparisons: Collier, Hudson and Ford, 1942, Upper Columbia region.

item: figure none
material: bone
type: awl
size: length 2.4 cm., width 1.3 cm., thickness .5 cm.
provenience: 24RA506, 2'3" B.D.

description: The specimen is a well polished, irregular shaped piece of bone which appears to have a hole drilled in it, and then it was cut from one edge to the hole.

comparisons: Osborne, Bryan and Crabtree 1961, Plates 48 and 52. These specimens have two projections.

item: figure 40d
 material: bone
 type: utilized large rodent tooth
 size: length 2.0 cm.
 provenience: 24RA510

description: The specimen is a rodent tooth, identified as a broken beaver or muskrat incisor. The cutting edge shows considerable wear, although perhaps natural. One small incision appears on the front side of the tooth.

comparisons: Collier, Hudson, and Ford, 1942, Upper Columbia

item: figure 40e
 material: bone
 type: beads
 size: .8 cm. diameter
 provenience: 24RA510

description: The two specimens are drilled sesmoidal bones, made into beads.

comparisons: none known

item: figure 40f
 material: bone
 type: bead
 size: length 1.1 cm., width 1 cm.
 provenience: 24RA506

description: The specimen is a bead made from a bird bone. It has one slash mark on it and is highly polished.

Faunal remains

Four samples of faunal remains were recovered, two of which are animal and two of which are human.

item: figure 41
 material: bone
 type: scapula
 size: length 20 cm. (not complete)
 provenience: 24RA506, 4'3" B.D.
 description: The specimen is an incomplete large mammal scapula, probably an elk. One segment shows extensive rodent chewing. Some unnatural striations appear on the top.

item: figure none
 material: bone
 type: vertebrae
 size: none complete
 provenience: 24RA506 4'3" B.D.
 description: The specimen is an incomplete vertebrae from a large mammal, probably an elk.

item: figure 42a
 material: bone
 type: femur, human
 size: incomplete
 provenience: 24RA510
 description: The specimen is identified as a left human femur. The lower epiphysis is missing.

item: figure 42b
 material: bone
 type: radius, human
 size: incomplete
 provenience: 24RA510
 description: The specimen is a human lower arm bone, specifically the radius.

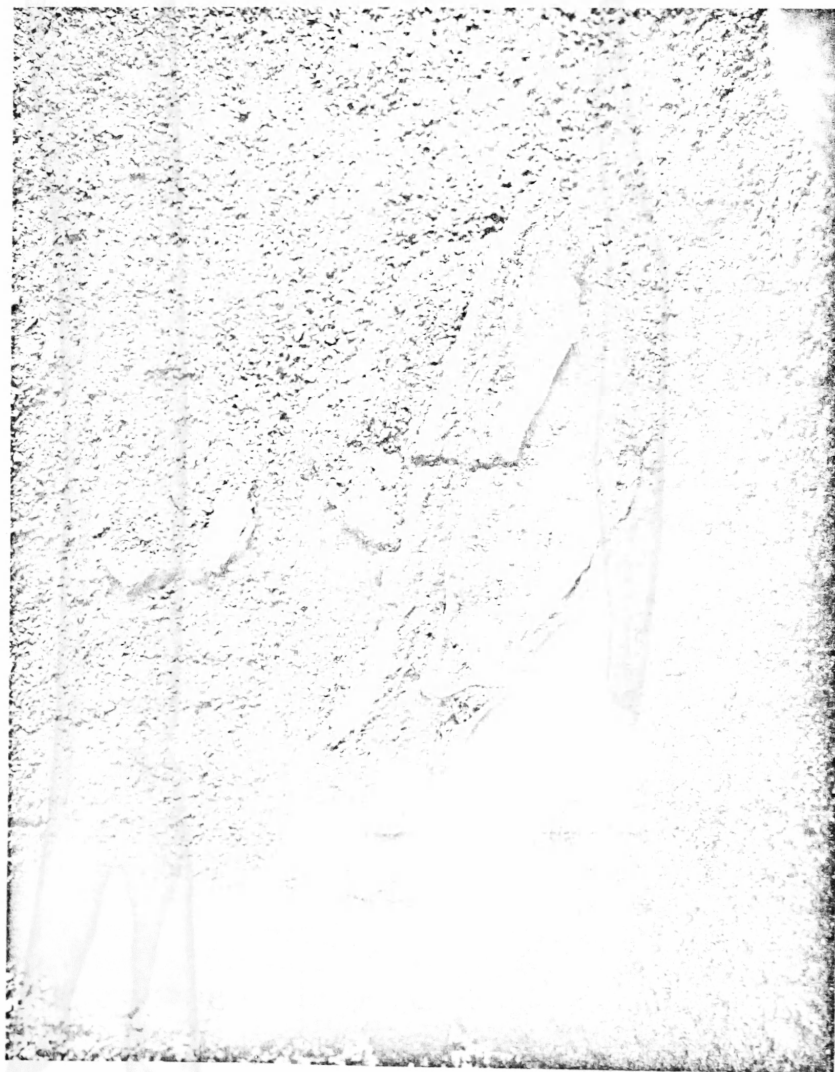


Fig. 41. Elk scapula. (a), femur, (b), radius.

Small pieces of fresh water mollusk shells were found at 24RA506 17" below datum. The fragments, some of which had small holes drilled in them, were about 1 cm. square. However, due to extreme fragility, they disintegrated before they could be removed.

Discussion

The range of materials from which the artifacts were made is varied. Volcanic materials were used, such as obsidian and ignimbrite. Known basaltic materials were found in the area. Obsidian is found in Yellowstone Park, Oregon, and the ignimbrite (Tuff) said that known outcrops of ignimbrite are about 15 to 25 miles northwest of Mammoth, Idaho. The source of the artifacts from the Maled area is about 40 miles northeast of Mammoth. It is the most common volcanic material found in the area. It is a fine-grained, light-colored material, but it is also found in Yellowstone Park and other areas.

Like obsidian, ignimbrite is a volcanic glass, but it is harder to observe the general appearance, but it is different in origin and texture, being formed in a fluid, explosive volcanic extrusion, and it is usually more translucent and delicate than obsidian. It is usually formed in a flow, and ignimbrite can be distinguished from obsidian by the lack of translucency and the edges of a fine-grained texture. It occurs in large masses of coarse-grained material, and it is usually somewhat more difficult to flake than obsidian. Ignimbrite may be a variety of colors, but black is most common, followed by red. Ignimbrite could be

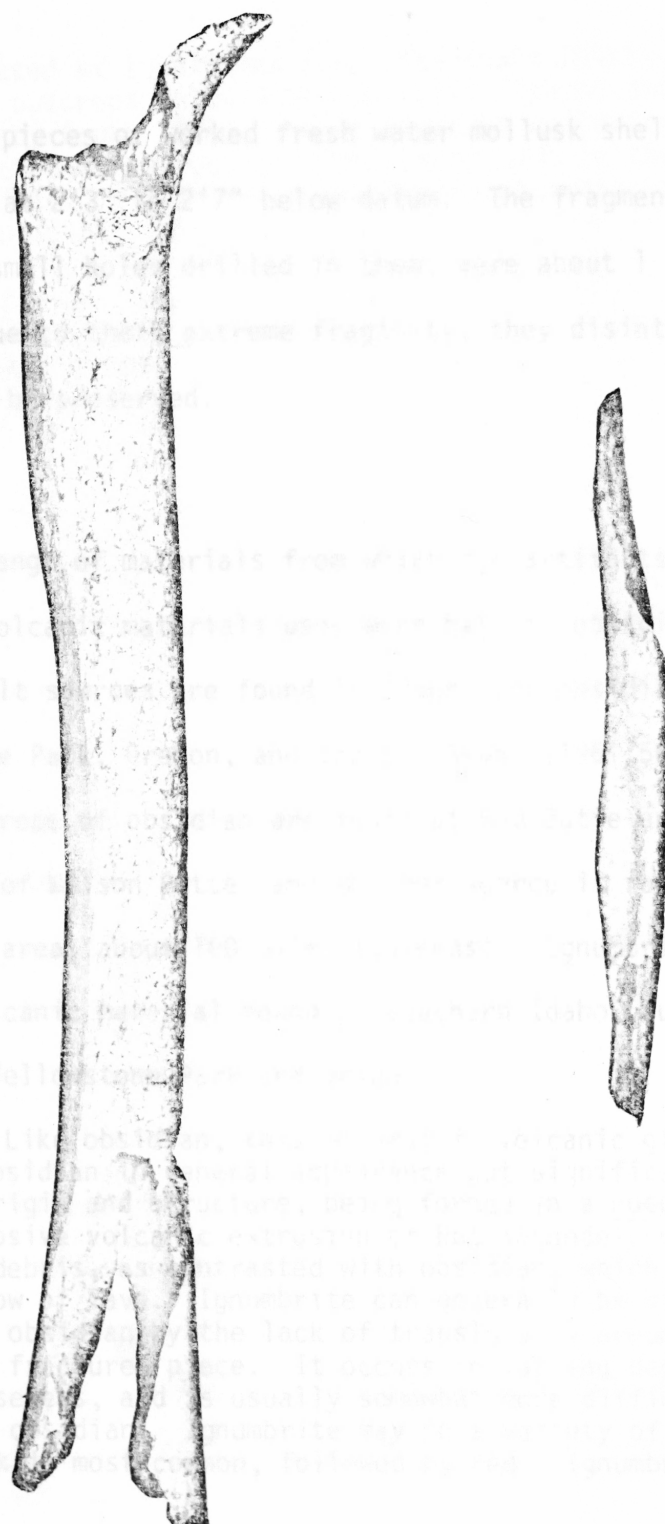


Fig. 42. Human faunal remains. a). femur, b). radius.

Shell

Small pieces of worked fresh water mollusk shells were found at 24RA506 at 2'3" to 2'7" below datum. The fragments, some of which had small holes drilled in them, were about 1 cm. square. However, due to their extreme fragility, they disintegrated before they could be preserved.

Discussion

The range of materials from which the artifacts were made is varied. Volcanic materials used were basalt, obsidian and ignimbrite. Known basalt sources are found in Idaho, and obsidian is found in Yellowstone Park, Oregon, and Idaho. Gruhn (1961:50) said that known outcrops of obsidian are found at Big Butte and 75 miles northwest of Wilson Butte, and another source is reported from the Malad area, about 100 miles southeast. Ignimbrite is the most common volcanic material found in southern Idaho, but it is also found in Yellowstone Park and Oregon.

Like obsidian, this mineral is volcanic glass, similar to obsidian in general appearance but significantly different in origin and structure, being formed in a nuee ardente or explosive volcanic extrusion of hot incandescent gases and debris, as contrasted with obsidian, which is formed in a flow of lava. Ignimbrite can generally be distinguished from obsidian by the lack of translucency around the edges of a fractured piece. It occurs in varying degrees of coarseness, and is usually somewhat more difficult to flake than obsidian. Ignimbrite may be a variety of colors, but black is most common, followed by red. Ignimbrite could be

collected at localities along the Snake River, such as at the known outcrops below American Falls (Sterns and Isotoff 1956, cited by Gruhn 1961), and it could be collected from outcrops or picked up as nodules along creek beds in the southern foothills, in Twin Falls and Owyhee Counties, where a number of aboriginal quarry sites are known (Gruhn 1961:50).

Also present are several types of chalcedony, although not all material sources are known. The yellow jasper resembles material found in the Phillipsburg, Montana area, which is east of the Sapphires and accessible by way of Skalkaho Pass. A poor grade of chert may be available locally. Samples were observed, but no quarry sites are known, although Joe Waldbillig reported a possible quarry in the vicinity of upper Miller Creek, it has not yet been found.

Although the sample was not large, a range of tool types is evident in the valley. Private collections, in addition to containing projectile points, often included a variety of knives, scrapers, awls and grinding tools, which came from the surface sites previously mentioned. The types of activities represented by the tools can not be absolutely ascertained, however, it is evident that the inhabitants hunted game animals, possibly elk, deer and bison, as evidenced by the pictographs at 24RA502 and 24RA503, and the faunal remains at 24RA506.

At 24RA517, 24RA506, 24M01082, and 24RA515, scrapers and knives were collected or observed. Food was probably prepared at

no jasper
quarry
found

these sites, also confirmed by grinding tools at two of the mentioned sites.

In survey and testing, no cores were found, and waste flakes were, on an average, one to two cm. in size. No cores were observed in collections. From this, it appears that the raw materials were used to a near maximum of efficiency. If indeed few sources, if any, of raw material existed in the valley, then the people would not waste what had to be brought in.

CHAPTER VII

SUMMARY

Interpretations

The extent of interpretations about the prehistory of the Bitterroot Valley reflects, in part, the survey method. With the exception of four instances, all surveys and tests were done by the investigator. Lack of money was a factor in the amount of time that could be spent doing field research. In addition, there simply appeared to be a paucity of sites. However, several sites, 24RA506, 24RA510 and 24M01082, made it possible to be definitive about some factors. The predominant type of site was that of pictographs; therefore, some of the conclusions were based on them. Because the artifact record reflected varying amounts of affiliations with the Great Basin, the Columbia Plateau, and the Northwestern Plains, a temporal resume was given for each. During the survey, no sites older than the Middle Period were found, and no indications of early man have been reported in western Montana. Therefore, the Middle Period has to be considered as the beginning point for interpretation.

Although it can vary, the Middle Period extended back to about 5,000 B.P. and continued up to about A.D. 600 (Wormington and Forbis, 1965). In the Plains, the corner-notched projectile point with a convex or concave base became prominent (Mulloy 1958:209). At the Powers-Yonkee Bison Trap (Bentzen 1962) extinct bison were associated with a variety of the McKean point type, which locally expressed itself as lanceolate to triangular bodies and concave and "eared" based. The date for the association was 4450 ± 125 B.P. Mulloy (1958) also reported the appearance of edge-ground cobbles during this period. Lack of artifacts in sites was thought to indicate shorter periods of habitation and/or smaller populations (Mulloy 1958:209).

In Late Prehistoric times, A.D. 600 to European contact times (Mulloy 1958) (Wormington and Forbis 1960), bison hunting was the main source of subsistence. The acquisition of the horse changed the basic lifestyle from one of limited travel to one of extensive nomadism, following the wild herds. Pottery appeared on the Plains, probably an influence of eastern groups moving into the Plains (Mulloy 1958). Small side-notched points also appeared. Historic or contact time is estimated to be ca. A.D. 1,800, although Mulloy (1958) said this can vary in different areas.

At Danger Cave in Utah, Jennings (1957) developed a stratigraphic sequence for that area which he was able to correlate with sites on the Plains, the Southwest, and the Northwest. McKean type points

occur from 9,000 to 3,000 B.P., through Levels II-IV, and although they occur more frequently in the earlier levels, Jennings sees their presence as a function of climate and an associated lifeway rather than a time marker (Jennings 1947:265). That is, because they are continuous in the stratigraphic record, they are thought to reflect an orientation to a dry climate based upon some hunting, but also showing greater dependence upon vegetable food stuffs. Mulloy (1954) dated comparable specimens at about 3,590 B.P. and Bentzen (1962) dated them at about 4,450 B.P. Similar artifacts were found at 24M01082 on Miller Creek and observed at 24RA517 on the East Fork of the Bitterroot River.

Predominant in Levels II-III, which date about 9,000-5,000 B.P. were triangular bladed points with deep corner notches and concave to straight bases, and stemmed points with ears. Level IV was predominantly characterized by non-sedentary seasonal gatherers who intensively exploited all aspects of the environment. Aikens (1970), at Hogup Cave, was able to verify Jennings's sequences at Danger Cave.

In the Plateau Butler (1968) showed that the Old Cordilleran Pattern, exemplified by large lanceolate or leaf-shaped points, extended up to 4,500 B.P. at Weis Rockshelter in eastern Idaho. Contemporaneous with the Old Cordilleran was the Lind Coulee Pattern, which had a slightly different assemblage based on shouldered points, similar to Jennings's Type W30 (Jennings 1957) (Warren 1961).

The predominant food resource was the bison, although smaller animals were also used. Warren (1961) suggested a date of 9,450 B.P. for the pattern. The representative points of these patterns did not appear in the Bitterroot Valley.

The Cold Springs Pattern, dated as late as 3,490 to 2,105 B.P. at Weis Rockshelter (Butler 1962:55-56), was explained as the time during which Cascade points (Old Cordilleran) and large side-notched points (Lind Coulee Pattern) appeared together (Warren 1961). Although the expression varied regionally, fish, shell-fish, deer and small mammals were primary food sources. Vegetable sources were also used, exemplified by the presence of manos and milling stones. The frequency of edge-ground cobbles declined. The Bitterroot side notched points appear from Idaho to Oregon but not in the Bitterroot Valley, (Warren 1961). Warren said (1961:32), "I see this change in projectile point types as representing a relatively rapid diffusion of a series of traits of which the large side-notched point is the most apparent. This is a distribution that now appears to require interpretation pointing toward some kind of historical relationship."

The Selah Springs Pattern, which is thought to have northern origins, may have extended from about 3,550 B.P. to A.D. 1,300 (Warren 1961). Large stemmed points were common and are thought to represent an adaptation to a forest environment. The people

are thought to have hunted mountain sheep and participated in seasonal migrations, dependent upon the economic activities. A woodworking economic activity was represented by the presence of antler and bone wedges, ground and flaked stone celts, and mauls. In the southern extent of the geographic location of the pattern, on the Oregon-Idaho boundry, the Selah Pattern was not present, and the expanded stemmed and stemmed indented base points became dominant prior to the beginning of the Plateau Pattern (Warren 1961).

The Plateau Pattern may have been the early expression of the ethnographic Plateau culture, as it occurred in historic sites. Basal-notched points, Desert side-notched, and rectangular stemmed points were the most characteristic of the Pattern at Wenas Creek (Warren 1961). Artifacts particular to the Pattern were broad based pestles, grooved sinkers, pipes--tubular, disk and elbow--and stone celts.

Warren (1961:46) saw a southern influence in the Plateau Pattern, with Desert side-notched points and some clay items. Large villages appeared along the Columbia.

Plains influences appeared late in the Plateau development, as catlinite pipes appeared in the archaeological and ethnographic records, although tubular pipes occurred somewhat earlier (Warren 1961:46). Tubular pipes however, were probably Shoshonean in origin.

The Selah Springs Pattern is seen as a major source in the development of the Plateau Pattern. It appeared earlier along the Lower Snake and in the arid parts of The Columbia Plateau. Although some sites provided dates of A.D. 240, A.D. 870, and A.D. 300, at Wenas Creek the Plateau did not appear until ca. A.D. 1,000 (Warren 1961:44).

No materials were available for dating the Bitterroot Valley data, either by radio-carbon methods or obsidian hydration. In order to place the prehistory of the Bitterroot in some sort of temporal scheme, comparative typologies were used. In doing so, the archaeologist should be aware that items do not spread at a constant rate, nor are they always due to diffusion. Therefore, similar types over a wide area may or may not indicate a long period of time. However, each artifact, with emphasis on projectile points, was tentatively dated by the use of comparative types from other areas.

The earliest representation of peoples utilizing the Bitterroot River Valley was at 24M01082 and 24RA517, where Duncan-Hanna type points appeared in association with corner-notched points. Although both sites were surface sites, the same combination appeared at Flathead Lake (Malouf 1956). Duncan-Hanna points appeared across Montana and Wyoming, and are generally considered to be a product of Middle Period peoples, about 5,000 B.P. About 6,000

12,000
11
7 free

B.P., the waters of Glacial Lake Missoula lowered, allowing occupation of the Bitterroot and its tributaries (Malouf, Personal Communication).

In the Plains, corner-notched points also represented the Middle Period, and they were followed by side notched points which were usually late in origin. Because no Plains side-notched points were observed in the valley and only one was found during the survey, side-notched points were probably not the preferred point type in the valley. Corner-notched points persisted in the Bitterroot Valley from the Middle Period to white contact, as in the Flathead Lake area (Malouf 1955). Corner notched points, which appear throughout the Middle Period of the Plains (Mulloy 1958) appeared in Danger Cave ca. 9,000-7,000 B.P. (Jennings 1957). The patterns in the Plateau, on the other hand, were never characterized by corner-notched points. During the several thousand concurrent years during which the McKean and corner-notched varieties were present in the Basin and on the Plains, those present in the Bitterroot could have been a result of ties with either adjoining area.

A comparative temporal sequence showing areal affiliations after about A.D. 600 can be constructed. During the Late Pre-historic, Plateau influences appeared in western Montana and the Bitterroot Valley, represented by conical pestles. Salishan peoples already in the area used them for pounding berries and food mixtures

(Malouf 1962a). The conical pestles then appeared in the archaeological record as far east as Central Montana--possibly taken there by the Salish on their annual trips to the Plains to hunt bison.

Increased Plateau influences appeared, possibly around A.D. 1300, when the Plateau Pattern (Warren 1961) was well underway in the eastern part of the Plateau, represented by celts and large bottomed pestles (24RA510 and the lower Miller Creek area). Celts, in fact, centered in the Fraser River Valley. The burial at 24RA510 was almost a classic representation of this intrusion into the Bitterroot from the Plateau.

Following occupations were tremendously influenced by Plains traits, represented by corner-tanged knives, pipes, and grooved mauls, which were succeeded by oblate mauls. The latter, in the Bitterroot, appeared in direct association with elbow pipes, both of which are ethnographically documented in use among the historic Kutenai and Flathead. Another Plains trait which appeared in western Montana was the increase in use of jaspers and flints for tools over the earlier useage of basalt and quartzite.

Several motifs present in the Bitterroot Valley pictographs are similar to those found on the Plains. For example, two types of shield bearing figures were found, which probably reflect pre - and post equestrian adaptations. Snake figures, which probably indicate

Basin ties, are also present. Several of the human figures resemble others thought to be of Shoshoni origin (Conner and Conner 1971). The southerly location of all the pictograph sites, within access of Idaho and the range of the ethnographically documented Shoshoni make this plausible. Solid colored human figures and counter lines, which occur throughout Montana, Wyoming and the Basin, may represent a western style rather than that of a specific group.

Noticeably lacking in the area's rock art were motifs associated with the Plateau--geometric designs and ribbed human figures (Nesbitt 1968).

As a whole, the character of the archaeological record resembled that for the rest of western Montana (Malouf 1956), although some traits were noticeably lacking. For example, camas or tuber roasting pits have not been found, although it is known that the Bitterroot Valley was a good place to find these types of food. Tipi rings were not found, but probable camp sites were cleared by modern cultivators. Prehistorically, other types of dwellings may have been used. Another feature which appeared in western Montana but not in the Bitterroot is what is often called a battle pit. These are found in the Flathead Lake region. Pottery, associated with Shoshoni intrusions into other parts of Montana, is lacking. Although a steatite bowl was reported, there is no proof of such artifacts. If its presence were validated, it would indicate

Shoshoni ties. If the Plateau influence was fairly complete, woven baskets probably were used. Also lacking are rock piles, used as trail markers and places for offerings. The Flathead, rather than placing offerings on rock piles, as in eastern Montana, venerated certain trees, such as the tree at 24RA513.

Association of specific sites with ethnographic groups of people is not an easy task, and it can only be minimally done in the Bitterroot Valley. The Pend d' Oreille and the Flathead were known to have occupied the general area prehistorically, extending out onto the Plains east of the Divide. Even before the acquisition of the horse, population migrations from the east had a domino effect on aboriginal groups throughout the Eastern Plains, and a steady westward displacement occurred. The introduction of the horse by the Shoshoni hastened the process, but it is possible that the Salishan people were already forced behind the Continental Divide by 1730.

The presence of conical pestles, large-bottomed pestles, and mauls indicates that Salishan people lived in the Bitterroot and were utilizing plant resources while hunting. Aside from the presence of projectile points, the deer or elk and bison pictographs indicate that people in the valley also hunted. Although the Pend d' Oreille, who were in the valley, fished, no riverine associated artifacts such as net-weights and fish gorgets were

found. The Pend d' Oreille and the Flathead made annual trips to the Plains to hunt bison, and Shoshoni also hunted them in the same area. Residents of the southern end of the valley, where the pictographs are located, could have hunted either on the Plains or in the Snake River Plain.

Early trappers and explorers, such as Ferris (Phillips 1940) Ross (1855) and Lewis and Clark (Thwaites 1904-5) arrived in the area in time to observe the actual creation of present archaeological sites.

Conclusions

It was originally hypothesized that due to the unique location of the Bitterroot Valley, east of the Columbia Plateau, west of the Northwestern Plains, and directly north of the Great Basin by way of the Snake River Plain, the valley would have been an ideal place for prehistoric occupation. Further, it was thought that the artifacts collected from the sites, along with information given to me by local residents, would show positive affinities with each of the aforementioned areas. Using comparative data from each of the contiguous regions, it was thought that a culture-historical sequence for the Bitterroot Valley could be formulated. It was further hoped that the data would allow me to construct some explanations as to how and why people chose to live in the valley or wherever else the sites appeared.

In total, 19 sites were recorded. The recorded data was similar to that found in the rest of western Montana. Through the use of comparative literature from the Plateau, the Plains and the Basin, it was concluded that the earliest manifestations present in the valley, i.e., the Duncan-Hanna type projectile points, are traits which are widespread over the western part of the United States. The Duncan-Hanna type points have been dated from about 8,000 to 4,000 years before present in eastern Montana, Wyoming and Utah. It is realized that the presence of similar appearing points in the Bitterroot does not indicate antiquity. They appear in conjunction with corner-notched points at the oldest strand level at Flathead Lake, which is the only sequential indication of antiquity at present in Western Montana. Like the corner-notched point, which exists in Western Montana from the Middle Period to historic times, the Duncan-Hanna form could also be a long continuing tool tradition in Western Montana. However, because comparisons of tool types are valid and because there is no other sequential base for Western Montana, this point type is thought to be the earliest indication of occupation in the Bitterroot Valley. No earlier types of tools were found. Possibly, this could be due to the fact that soil builds up very rapidly in the valley, and the heavy sod cover does not allow much erosion, which would reveal earlier deposits.

Until about A.D. 1,300, when Plateau Pattern influences appeared in the valley, the occupants of the area apparently used corner-notched projectile points, which compliments the results Malouf found at Flathead Lake (1961). About A.D. 1,300, conical pestles, green serpentine celts and elongated bone awls appeared in the valley. A burial, at 24RA510, contained a green celt and three bone awls. Two of the latter had points which abruptly converged, and the third, made from a scapula, had a long and gradual point. Aikens (1970), describing material from Hogup Cave, Utah, suggested

It seems likely that these differences in form of the working part of the tool are related to differences in function, and it is suggested that perhaps the tougher, abruptly tapered ones were adapted to leather working and the thinner, more finely tapered ones were used in the manufacture of coiled basketry. This is purely speculative, however; there is no stratigraphic evidence of close association between awl types and leather or basketry artifacts that could be applied as a test of this hypothesis.

Even though the artifacts at 24RA510 were apparently contemporaneous in time, Aikens' thought had merit. The certain Plateau affinities of the burial meant that the ethnic group responsible for the burial probably worked leather and made baskets, as Plateau groups did.

After this the grooved maul appeared in western Montana and the Bitterroot Valley from the Plains. Later a large bottomed pestle appeared in the valley and the rest of Western Montana from the Plateau. It occurred in the archaeological record with oblate

mauls. These tools continued up to and well into historic times and were used by the Flathead and Kutenai.

As a whole, it appeared that occupation of the valley extended no further back than sometime during the Middle Period, as was the situation in the rest of western Montana. The tool types did not vary until about A.D. 1,300 when definite Plateau influences, such as pestles, celts, and copper, appeared. After this, there was a constant introduction of new tools into the valley from the Plains and the Plateau at what seem like alternate intervals. The Plateau influences appeared to have had the final effect on the tool type, and they extended up into historic times.

The sites were not located specifically at mouths of tributary rivers or any other discernable topographic area. The most obvious locational similarity was the concentration of sites in the upper end of the valley, above Darby. Most of the mountain passes are in this area, and they also lead more directly to the Big Hole area to the southeast and to the Plains to the east, the Snake River Plain and the Plateau by the same route to the south, and the Plateau to the west by way of Lost Horse Pass. Moreover, there are several warm springs in the area, and 24RA517 was directly associated with one, and 24RA501, 24RA514, and 24RA515 were all within two miles of another. In addition, the upper portion of the valley tends to have milder weather than does the lower end.

The upper portion of the valley was also used for social and religious significance. The Medicine Tree was a place for offerings for propitious hunting, venerated by the Flathead. If Malouf (1961) was correct, many of the pictographs, one of which is directly above the Medicine tree, were records of vision quests by the Kutenai and possibly the Pend d' Oreille.

There are several possible reasons why little archaeological remains appear in the valley. Rather than being a positive factor in drawing people to the area, the mountains on both sides of the valley appear to have inhibited a continuous flow of occupations from the surrounding areas. One factor to consider is that during the winter the passes were snowed shut, thus although not preventing passage, as the Pend d' Oreille and other groups had snowshoes (Malouf personal communication), it tended to be a detriment. The area could have been most widely exploited in the springtime when the cambium layer in the ponderosa was ready for eating, and in the fall, when food sources such as seeds and berries, were ready for harvest. But the warm springs in the upper end of the valley and at Lolo in the lower portion were definitely attractive during the winter. Lewis and Clark (Thwaites 1904-5) mentioned the Flathead using the warm pools at Lolo to keep their horses warm during the winter. However, Lolo is easily accessible through the

Clark Fork Valley, and there probably was no need to continue up the valley when warm springs were so readily available near an open route.

About 50 per cent of the sites were occupation sites. Because they appeared to be rather small in size and even local collectors did not obtain a great deal of material from each, the social unit was probably rather small, and may have been no larger than a family unit.

Although amateur collectors usually tend to pick up only projectile points, several collectors in the valley also kept scrapers, knives, and some waste flakes. From the collections observed and from the data found during the course of the survey, not a great many scrapers were found. This could indicate that the sites were small temporary sites used while game was being hunted, and a full range of household activities was not carried on or social units were small. More knives than scrapers were observed and collected. These tools were more important in the actual butchering of game than were scrapers.

The availability of water throughout the valley obviated the need to camp in one place while in the area hunting, fishing and gathering plants for a few days. The group could move to a new location and not have to worry about water. This would cut down the size and intensity of artifacts at any one site.

The availability of food sources also had a good deal to do with the amount of occupation. Although the valley appears to have abundant game and wild plants, the Plains to the east, the Big Hole country to the southeast, and the Snake River Plain to the southwest in Idaho were a great deal more attractive when bison hunting was important. If this were so, then the valley was used as an intermediate hunting and gathering area en route to other food sources.

Fredlund and Fredlund (1971) and with LaComb (1971) found high altitude game drives in the Bitterroot Mountains, which could only have been used during warmer seasons. The projectile points from the sites resembled the McKean-Duncan-Hanna Middle Period material found at sites in eastern Montana, Wyoming, and Utah (Herda, personal communication).

In conclusion, in spite of the unique placement of the valley adjacent to three cultural areas, the mountains surrounding the valley acted as natural barriers against excessive prehistoric occupation. A sketchy culture-historical sequence has been formulated, beginning at about 5,000 years before present and continuing up to historic times. A variety of plants and animals were used as food sources by people who were influenced by Great Basin, Plains, and Plateau affinities. In turn, the western Montana region, at times, affected the later Plateau cultures, and at least

as far as Central Montana to the east. Finally, the Plains complexes almost overwhelmed that of the Plateau just before Europeans entered the region.

LITERATURE CITED

- Aiken, Melvin C.
1970 Hogup Cave. University of Utah Anthropological Papers.
No. 93. Salt Lake.
- Barnier, Cecil
1971 Archaeological Survey of the National Bison Range and
Other Portions of the Lower Flathead Basin, Montana.
Archaeology in Montana, Vol. 12, No. 2 & 3.
- Bentzen, Raymond
1962 The Powers-Yonkee Bison Trap. Plains Anthropologist.
Vol. 4, 7-16, pp. 113-118.
- Butler, B. Robert
1959 Lower Columbia Valley archaeology: a survey and
appraisal of some major archaeological resources.
Tebiwa, Vol. 2, No. 2, pp. 6-24. Pocatello.
- 1962 Contributions to the prehistory of the Columbia Plateau
--a report on excavations in the Palouse and Craig
Mountain sections. Idaho State University Museum
Occasional Papers, No. 9. Pocatello.
- 1968 A guide to understanding Idaho Archaeology. Idaho
State University Museum. Pocatello.
- 1971 A Short History of Bison West of the Continental Divide.
Unpublished Manuscript. Idaho State Museum. Pocatello,
Idaho.
- Collier, Donald, Alfred E. Hudson and Arlo Ford
1942 Archaeology of the Upper Columbia Region. University
of Washington Publications in Anthropology. Vol. 9,
No. 1, pp. 1-178. Seattle.

- Conner, Stuart, and Betty Lou Conner
 1971 Rock art of the Montana high plains. Santa Barbara: University of California.
- Cornwall, I.W.
 1956 Bones for the archaeologist. Phoenix House Ltd., London.
- Cressmen, L.S.
 1960 Cultural sequences at The Dalles, Oregon. A contribution to the Pacific Northwest prehistory. Transactions of the American Philosophical Society, Vol. 50, Pt. 10. Philadelphia.
- Daughtery, Richard D.
 1956 Archaeology of the Lind Coulee Site, Washington. Proceedings of the American Philosophical Society, Vol. 100, No. 3, pp. 223-78. Philadelphia.
- Elrod, John Morton
 1908 Pictured Rocks. Indian writing on rock cliffs of Flathead Lake, Montana. Bulletin of the University of Montana, No. 46, Biological Series, No. 14. Missoula.
- Fenneman, Nevin M.
 1931 Physiography of the western United States. New York: McGraw-Hill.
- Ferris, W.A.
 1940 Life in the Rocky Mountains, ed., by Paul C. Phillips, Denver. 232-233.
- Fredlund, Dale and Lynn Fredlund
 1971 Archaeology survey of the Three Forks of the Flathead River, Montana. Archaeology in Montana, Vol. 12, Nos. 2 and 3. Missoula.
- _____ and William LaCombe
 1971 Alpine archaeology in the Bitterroot Mountains of Montana. Unpublished Manuscript.
- Griswold, Gillett
 1953 An occupation site in the Hungry Horse Reservoir Area (24FH1). IN Archaeological Sites in the Flathead Lake Region, Montana: a symposium. Montana State University Anthropology and Sociology Papers. Missoula.

- 1970 Aboriginal patterns of trade between the Columbia Basin and the Northern Plains. Archaeology in Montana, Vol. 11, Nos. 2 & 3. Missoula.
- Gruhn, Ruth
1961 The archaeology of Wilson Butte Cave, south-central Idaho. Idaho State University Museum Occasional Papers, No. 6. Pocatello.
- Guther, Erna
1950 The Westward Movements of some Plains Traits. American Anthropologist. Vol. 52, No. 2, pp. 174-180.
- Haines, Francis
1938 The Northward Spread of Horses Among the Plains Indians. American Anthropologist. 40:436.
- Heizer, Robert F. and Alex Krieger
1956 Humboldt Cave, Churchill County, Nevada. University of California Publications in American Archaeology and Ethnology. Vol. 47, No. 1, pp. 1-190. Berkeley.
- Herda, Bonnie
High altitude research in the Bitterroot Mountains. Personal Communication.
- Husted, Wilfred M.
1969 Bighorn Canyon archaeology. Smithsonian Institution River Basin Surveys, Publications in Salvage Archaeology, No. 12.
- Jennings, Jesse D.
1957 Danger Cave. Memoirs of the Society for American Archaeology, No. 14, Vol. 23, No. 2 part 2. University of Utah Press.
- Loendorf, Lawrence L.
1969 The results of the archaeological survey in the Pryor Mountain-Bighorn Canyon recreation area--1968 Field Season. Unpublished Manuscript.
- Loud, L.L., and Mark R. Harrington
1928 Lovelock Cave. University of California Publications in American Archaeology and Ethnology. Vol. 24, pp. 1-183. Berkeley.

Lowie, Robert

- 1909 The Northern Shoshone. Anthropological Papers of the American Museum of Natural History, Vol. II, Part II. New York.
- 1954 Indians of the Plains. Natural History Press. New York.

Lindgren, Waldemar

- 1904 A geological Reconnaissance Across the Bitterroot Range and Clearwater Mountains in Montana and Idaho. United States Geological Survey Professional Papers, No. 27. Washington, D.C.: Government Printing Office.

McMurtrey, R.G., and R.L. Konizeski

- 1956 Progress report on the geology and ground water resources of the eastern part of the Bitterroot Valley, Montana. Montana Bureau of Mines and Geology. Butte.

McMurtrey, R.G., R.L. Konizeski, and Frank Stermitz

- 1959 Preliminary report of the geology and ground-water resources of the Bitterroot Valley, Montana. Montana Bureau of Mines and Geology, Bulletin No. 9. Butte.

Malouf, Carling I.

- 1956 The Montana Western Region. Research Studies, Vol. 24. State College of Washington, Pullman.
- 1962a Stone Mauls. Archaeology in Montana. Montana State University Vol. 4, No. 2, pp. 11-13.
- 1962b Pestles. Archaeology in Montana. Montana State University. Vol. 4, No. 4, pp. 3-6.
- 1964 The Indian Post Office. Archaeology in Montana. Vol. 5, No. 4, pp. 13-14. Missoula.
- 1961 Pictographs and Petroglyphs. Archaeology in Montana. Vol. 3, No. 1. Missoula.
- 1965 Archaeological Reconnaissance, Vicinity of West Glacier, Glacier National Park, Montana. Unpublished Manuscript.

1966 Slate Knives or Scrapers. Archaeology in Montana. Vol. 6, No. 4, pp. 1-4. Missoula.

1967 Historic Tribes and Archaeology. Archaeology in Montana. Vol. 8, No. 1. Montana Archaeological Society. Missoula.

1968 The Shoshonean Migrations Northward. Archaeology in Montana. Vol. 9, No. 3, pp. 1-19. Missoula.

—— Carling Malouf, Department of Anthropology, University of Montana. Personal Communication.

Martin, Alexander, Herbert Zim, and Arnold Nelson

1951 American Wildlife and Plants. McGraw-Hill Book Company, Inc. Maple Press, York, Pennsylvania.

Mulloy, William T.

1958 A Preliminary Historical Outline for the Northwestern Plains. University of Wyoming Publication.

Nelson, Nels C.

1943 Contributions to Montana Archaeology. American Antiquity. Vol. 9, No. 2, Nenasha, pp. 162-69.

Nesbitt, Paul Edward

1968 Stylistic Locales and Ethnographic Groups: Petroglyphs of the Lower Snake River. Idaho State University Museum Occasional Papers, No. 25. Pocatello.

Osborne, Douglas

1957 Excavations in the McNary Reservoir Basin near Umatilla, Oregon, River Basin Survey Papers, No. 8, Bureau of American Ethnology, Bulletin 166, Smithsonian Institution, Washington, D.C.

- Osborne, Douglas, Alan L. Bryan, and Donald Crabtree
 1961 The Sheep Island Site and the Mid-Columbia Valley. Bureau of American Ethnology Bulletin 179. River Basin Survey Papers, No. 24, pp. 267-304. Washington, D.C.
- Oosting, Henry J.
 1948 The Study of Plant Communities. W.H. Freeman and Company. San Francisco.
- Ray, Verne F.
 1939 Cultural Relations in the Plateau of Northwestern America. Southwest Museum. Los Angeles.
- Ross, Alexander
 1855 The Fur Hunters of the Far West. 2 Vols. (London), II, pp. 18-19.
- Sahinen, Uuno
 1967 Montana Mines and Mineral Deposits, Missoula and Ravalli Counties. Montana Bureau of Mines and Geology, Bulletin No. 8. Butte.
- Shiner, Joel L.
 1961 The McNary Reservoir; a study in Plateau Archaeology. River Basin Surveys, No. 23 Bureau of American Ethnology Bulletin 179. Smithsonian Institution, Washington, D.C.
- Smith, Harlan I.
 1910 Archaeology of the Yakima Valley. American Museum of Natural History, Anthropological Papers, Vol. 6, part 1.
- Spinden, H.J.
 1908 The Nez Perce Indians. American Anthropological Association, Memoirs, Vol. 2, part 3, pp. 165-274.
- Swanson, Earl J.
 1962 The emergence of Plateau culture. Occasional Papers of the Idaho State College Museum, No. 8, Pocatello.
- Swanson, Earl J., B. Robert Butler and Robsen Bonnicksen
 1964 Birch Creek Papers No. 2--Natural and Cultural Stratigraphy in the Birch Creek Valley of Eastern Idaho. Idaho State University Museum Occasional Papers, Number 14. Pocatello.

Swanson, Earl J., and Paul G. Sneed

- 1966 Birch Creek Papers Number 3--The Archaeology of the Shoup Rockshelters in East Central Idaho. Idaho State University Museum Occasional Papers, No. 17. Pocatello.

Taylor, Dee C.

- 1964 Preliminary archaeological investigations in Yellowstone National Park. Unpublished manuscript.
- 1973 Archaeological Investigations in the Libby Reservoir Area, Northwestern Montana. University of Montana Contributions to Anthropology. Number 3. Missoula.

Teit, James A.

- 1930 The Salishan tribes of the western Plateaus. In Forty-fifth Annual Report of the Bureau of American Ethnology, ed., by Franz Boas. Government Printing Office, Washington, D.C.

Thwaites, Reuben Gold, ed.

- 1904-5 Original journals of the Lewis and Clark expedition 1804-1806, 8 Vols. Dodd, Mead and Co., New York.

Turney-High, Harry Holbert

- 1937 The Flathead Indians of Montana. Memoir Number 48. American Anthropological Association.

Warren, Claude N.

- 1968 The View from the Wenas; a Study in Plateau Prehistory. Idaho State University Museum Occasional Papers, No. 14. Pocatello.

Wedel, Waldo R.

- 1961 Prehistoric man in the Great Plains. Norman: University of Oklahoma Press.

Weisel, George F., Jr.

- 1965 The Ram's Horn Tree and Other Sacred Medicine Trees of the Flathead. In Red Man's West, ed., by Michael S. Kennedy. From Montana, the Magazine of Western History. Hastings House Publishers, New York.

White, Thain

- 1954 Scarred trees in western Montana. Montana State University Anthropology and Sociology Papers, No. 17. Missoula.

Willey, Gordon R.

- 1966 An Introduction to American Archaeology. Vol. I, North and Middle America. Prentice-Hall, Englewood Cliffs, New Jersey.

Wissler, Clark

- 1927 North American Indians of the Plains. American Museum of Natural History. New York.

Wormington, Helen M. and Richard G. Forbis

- 1960 An Introduction to the Archaeology of Alberta, Canada. Proceedings Denver Museum of Natural History No. 11.

Wright, Phillip.

- Identification of faunal material. Department of Zoology, University of Montana. Personal Communication.